



THE RESOURCE FOR INFORMATION EXECUTIVES

BOUND to FAIL

Comair bet it could squeeze one more day out of a critical application. Comair lost. A cautionary tale for CIOs tied to their legacy systems.

BY STEPHANIE OVERBY

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*** PLUS**

SUCCESSION PLANNING AT UPS

What makes it work there. How to make it work for you. Page 56

OUTSOURCING STRATEGIES

How to get the most out of multiple providers.

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7:02 am





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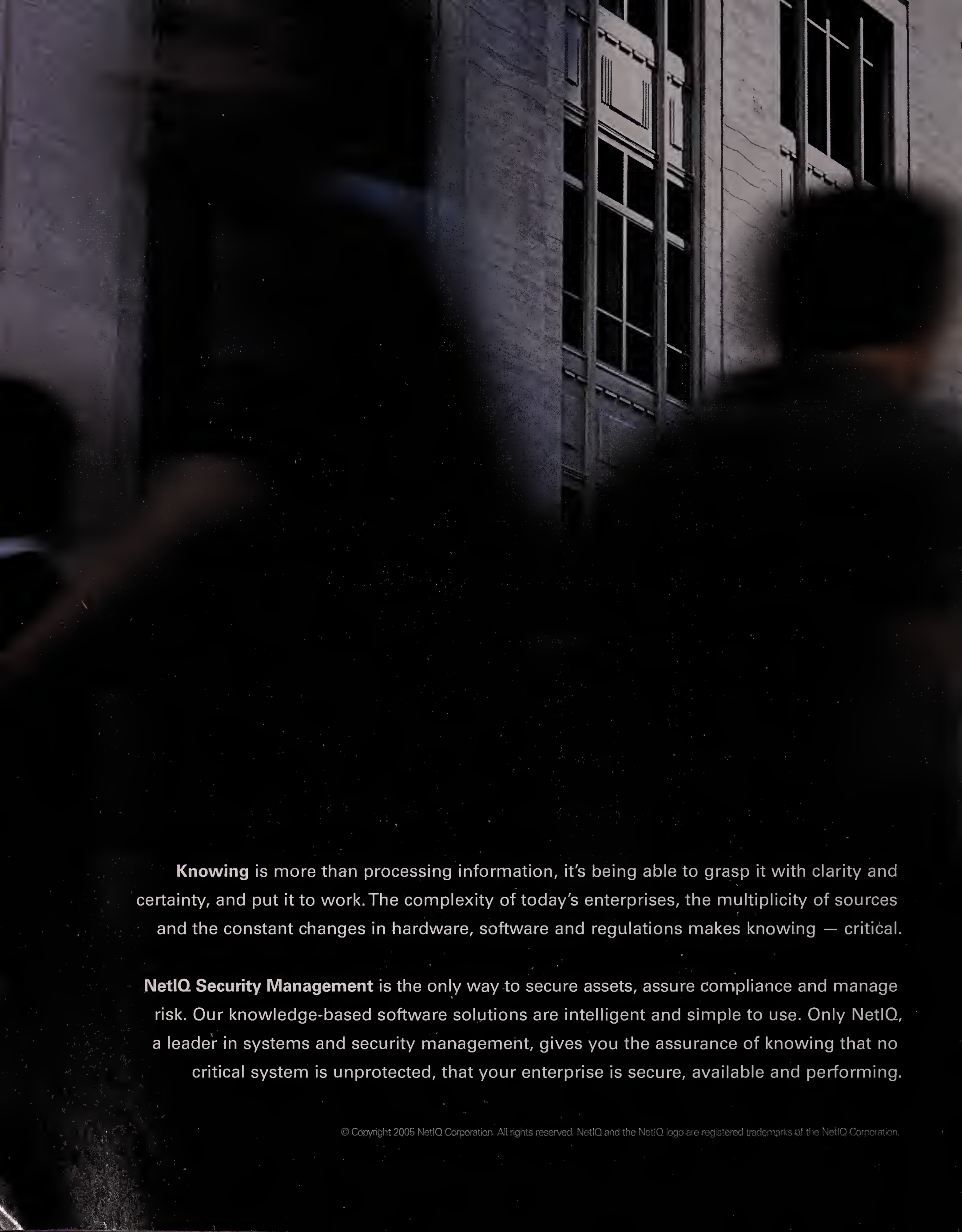
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Intelligent Infrastructure, *Overlaying the Internet with an intelligent infrastructure unleashes the next generation of business potential*

Intelligent Business

As amazing a business tool as the Internet has become, the fact remains that organizations have just scratched the surface of its far greater potential. The ability of Voice over IP (VoIP) to radically reduce fundamental communications costs is one early indication of the Internet's transformational capabilities. The unique insight into Internet security patterns and trends can allow a managed security services provider to give businesses the extra measure of security protection demanded today. Radio frequency identification (RFID) projects are literally redefining the way manufacturers and their partners interact. From these examples and others, it is clear the emergence of intelligent infrastructure services is bringing the potential of the Internet to full flower.

It would be more than three decades before the short-haul railroads that sprung up everywhere starting in the 1830s would finally be interconnected and transformed into a national rail system. This took such a long time simply because railroad operators had to use sluggish, unreliable overland mail services to coordinate this vast effort.

But once telegraph lines were installed right alongside the rail beds, two-way communication became almost instantaneous. Rail development soared as a vast national network took shape. And it all happened because the original system was overlaid with an *intelligent infrastructure: the telegraph network*. Thus, a network faced with a critical level of usage and a growing complexity threatening its usefulness was instead transformed into a veritable engine of progress and growth. The rest, as they say, is history.

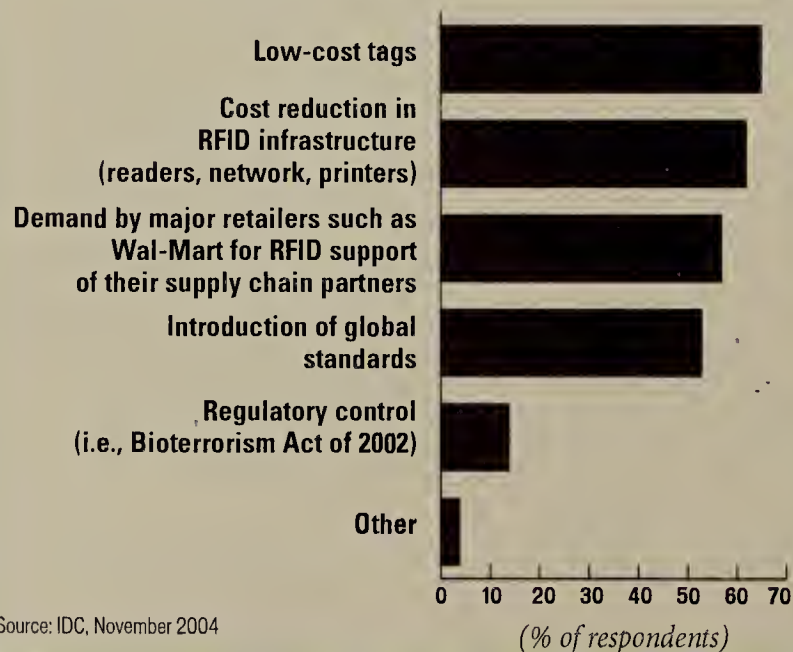
The same can be said today about the Internet. This network of networks holds almost limitless potential to link businesses to partners,

suppliers, and customers in dynamic, interactive ways. The vision of a supercharged Internet will reach its full potential only if these links and connections can be made secure, reliable, and adaptable. In other words, like the early railroads of 175 years ago, the Internet needs an overlay of intelligent infrastructure. The Domain Name System (DNS) was the critical intelligent infrastructure that linked requests for user-friendly domain names to more complex IP addresses, which helped make the Internet accessible to the masses. Similarly, intelligent infrastructure will play a critical role in unlocking the tremendous business potential of the Internet as it grows.

Intelligent infrastructure for the Internet will provide several, if not all, of the following key network enhancements—scalability, security, interoperability, availability, adaptability, and visibility—to literally change business processes and their economics. Already, intelligent infrastructure is enabling some of the most exciting business applications, such as VoIP, highly touted RFID-enabled supply chains, and mobile digital content delivery systems.

Top 3 Drivers of RFID Market Acceptance

Q. In your opinion, what will be the top 3 most important factors in driving RFID mass-market acceptance?



The drivers

The development of intelligent infrastructure services is intimately linked to today's major business and network drivers. These drivers include:

- **The growing use of the Internet for mission-critical applications.** During the year-end holiday shopping period last year, shoppers placed some \$9 billion of orders online. That number should double in three years. But growth will be stopped dead in its tracks and even recede rapidly if consumer confidence in secure online transactions doesn't continue to grow in tandem.
- **The rapidly rising tide of regulatory compliance.** The business lexicon today is spiked with an alphabet soup of acronyms referring to new compliance regulations related to business data. From SOX to HIPPA to CALEA and so on, these regulations are placing heretofore unheard-of demands upon IT managers to maintain a scalable security framework to comply with internal and external audit requirements.
- **The fight against phishing and identity theft.** These two culprits, left unchecked, would be a big glass of icy cold water thrown in the face of Internet commerce, and the ramifications would be disastrous for so many kinds of organizations that have invested so heavily in e-commerce infrastructures.
- **The interoperability mandate.** Everyone knows that business-critical communication is trending outside the four walls of the organi-

zation or, in network terms, far beyond the firewall. The most important network and data links are among a business and its partners, customers, and suppliers. If the underlying network infrastructure doesn't have the intelligence to recognize and accommodate the disparate systems it inevitably encounters, growth of these vital communications links will surely be stunted.

■ **The business continuity mandate.** Several years ago an industry pundit declared, "The network is the computer." The contemporary version of that truism is: "The network is the *business*." Just ask executives at an airline or hotel, or a modern manufacturing operation. If workers and smart machines can't access and swap information, work for all practical purposes grinds to a halt. Real costs accrue. Jobs and careers are jeopardized. The network has to be solid and stable, without compromise.

VeriSign answering the call to action

While the items above are noted as "drivers," IT managers usually refer to them as "formidable challenges," among other things. For IT managers, who have been working on very tight budgets over the last several years and are being pushed to support core business requirements and applications, the mere thought of meeting these challenges is daunting.

This is where VeriSign enters the fray. With its focus on providing and shaping the Internet's intelligent infrastructure, VeriSign is singularly dedicated to enabling businesses to find, connect, secure, and transact across today's complex Internet, telecommunications, and converged networks.

Perhaps most widely known for its Domain Name Registry Services, VeriSign in fact operates an intelligent infrastructure that processes an astonishing 14 billion Web and email lookups each day. In North America, the greatest of all commercial marketplaces, VeriSign handles more than 37% of all e-commerce transactions, securely processing some \$100 million in daily online sales.

By leveraging its rich and deeply experienced Internet legacy along with key technology acquisitions made in recent years, particularly in the digital content management area, VeriSign is positioned as the leader in providing intelligent infrastructure services at just the right time in business history.

Intelligent infrastructure in action

In many ways, intelligent infrastructure is synonymous with the most exciting aspects of network convergence and the blossoming of next-generation networks. VeriSign's expertise is already delivering results to IT professionals. In the red-hot area of Managed Security Services (MSS), VeriSign has leveraged its unique experience and insight into Internet security patterns and trends to provide unparalleled intelligent MSS. These services hit many IT security sweet spots, such as the growing problem of phishing or identity theft, as well as end-point protection and managed vulnerability protection services.

"As enterprises face external forces that impact their business, such as hacker attacks, and cost, compliance, and complexity issues, they are looking to Managed Security Services Providers to help them with their network security. However, point solutions and MSSPs without unique differentiators do no good. With cyber attacks increasing in size and sophistication, they need unique insight into trends within their networks, across networks, and the Internet to make sure appropriate security protections are taken."

—Judy Lin, Executive Vice President and General Manager, VeriSign Security Services

When it comes to RFID-enabled supply chains, where electronic "tags" are poised to replace the current barcode system, VeriSign is making it possible for manufacturers and their partners to get more fine-grained, real-time inventory intelligence. Forrester Research says partnerships between VeriSign and leading data synchronization vendors will help companies leverage and exploit RFID while at the same time preserving existing technology investments. Developments in RFID are providing scalable IP data sharing and trust services, enabling demand-driven supply chains, and increasing visibility.

VoIP carries the promise of sending a lot of today's communications costs through the floor. But for service providers to deliver on this promise to eager enterprise customers, they must first undertake a lot of basic blocking and tackling, such as providing secure connections to allow VoIP to pass through despite the large number of ports to be opened within a corporate firewall. VeriSign intelligent infrastructure services will provide all this and more to allow carriers to deliver the full benefits of VoIP while addressing their own needs to bridge Internet and telecommunications infrastructure.

VeriSign has also been active in the nascent digital content services area. A new VeriSign service offering allows

mobile network operators to respond on a global scale to new service demands, from both businesses and consumers, for multimedia and interactive digital content delivered over mobile devices. These include intelligent messaging services to help businesses mobilize communication, collaboration, and workflow applications on just about any digital mobile device.

A good example of intelligent infrastructure in operation is as follows: A sales executive is roaming on her cell phone (1), which switches over to an IP-based network (2), to make a transaction (3) in which content is secured (4) and delivered (5) back through that same connection. In this case, VeriSign has provided her with five different intelligent infrastructure services—transparent to her and the vital function she just fulfilled.

A matter of focus

This is just one example of how VeriSign has exploited its rich heritage of supplying Internet services to meet some of the most pressing challenges IT managers face as they struggle to meet today's hot IT issues of cost, complexity, and compliance. VeriSign is offering that overlay of intelligent infrastructure services essential to providing seamless, transparent interoperability among various network functions, clearing away obstacles to completing large IT projects that drive competitiveness.

Ultimately this vision and experience can pay significant dividends to enterprise IT managers who understand the potential of an Internet-based network overlaid by intelligent infrastructure services.





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ERP

BIG MESS ON CAMPUS | 82

Disastrous ERP implementations have given more than a few universities black eyes. Fortunately, alternatives to these complex integrations now exist. **Feature by Thomas Wailgum**

Knowledge Management

HOW TO SALVAGE YOUR COMPANY'S DEEP SMARTS | 38

The approaching exodus of retiring baby boomers will severely erode the knowledge base of many companies. Fortunately, there are ways to re-create this crucial expertise.

Column by Dorothy Leonard

DEEP SMARTS ONLINE | CIO.COM

Just how important is it to cultivate and transfer "deep smarts" in your organization? Find out in the online excerpt from the book, *Deep Smarts: How to Cultivate and Transfer Enduring Business Wisdom*, by Dorothy Leonard and Walter Swap. www.cio.com/050105

Leadership

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Being a CIO in the health-care industry can be a trial. For Sutter Health's John Hummel, practicing the art of political theater helps soften the tribulations.

Feature by Meridith Levinson

Leadership Development

NOTHING SUCCEEDS LIKE SUCCESSION | 56

New UPS CIO Dave Barnes is the latest product of a culture that values succession planning. **Feature by Thomas Wailgum**

A TEAM STARTS WITH TWO | 32

The best way to develop employees is one-on-one coaching, yet too few executives seem interested in making the effort.

Column by Susan Cramm

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The failure of a legacy application long overdue for replacement shut Comair down over Christmas. CIOs must build an urgent business case to replace legacy threats before it's too late.

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Risk Management

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The crash of a critical legacy system at Comair is a classic risk management mistake that cost the airline \$20 million and badly damaged its reputation. **Feature by Stephanie Overby**

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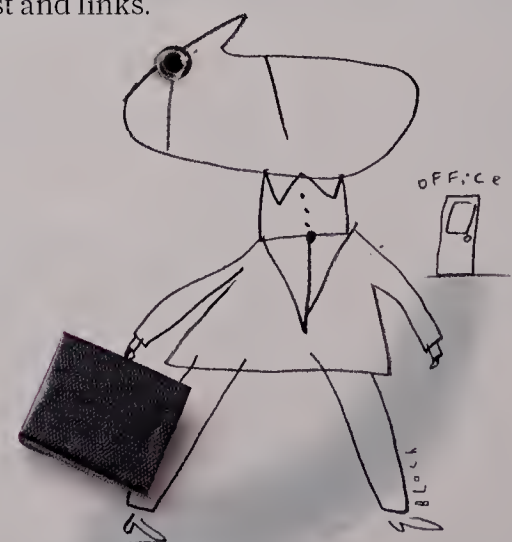
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Larry Bonfante, CIO for the US Tennis Association, says his organization's small size means big, broad service providers like HP aren't interested in winning his outsourcing business. That forces him to outsource to multiple niche vendors.

Outsourcing Vendor Management

MULTIPLE CHOICE ANSWERS | 66

Managing multiple outsourcing vendors is costly and complex, and in order to control contracts and providers, smart CIOs are using vendor dashboards and training their staff in finance.

Feature by **Susannah Patton**

MULTIVENDOR SCORECARD | CIO.COM

For an example of one tool to keep track of your outsourcing vendors' performance, see the scorecard at www.cio.com/050105.

Work Environment

NO FUN OF ANY KIND | 44

We tend to take our jobs—and ourselves—much too seriously, which is why we often don't enjoy either very much.

Column by **Megan Santosus**

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Editor's Note: Michael Schrage's Feb. 15 column, "Ready, Aim, Fire!" generated tremendous response. The column advocated firing the right person at the right time—if that person is a prima donna and not considered a team player. Often, those employees are the ones causing the most strife within an organization or department. Below are various responses to the column.

Mindful Management

The best advice I've ever heard was "hire slow; fire fast."

I don't wait for endless problems before I get rid of someone. We're all professionals. Explain the problem; reference the original understanding; explain the expected solution. If I can tell that the employee isn't even trying to implement the solution (and if you've been a manager for more than six months, you can tell), I get rid of them. Quickly.

The job of a manager isn't to train someone how to act in public; it's to lead a diverse team to work together to accomplish a task.

DANIEL R. SWEET
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The thinking that firing one person equates to an automatic increase in quality means there is no end objective or strategy in place. Other variables need to be considered to determine the quality and credibility of an IT project or department.

Firing someone and explaining why you did it is similar to taking candy away from a child and explaining why he's been naughty. Grown people are not that naive, and implementing scare tactics will hurt your organization in the long run. Other variables, in combination with people's attitudes, need to be taken into consideration.

A long-term fix would be to spend the money on better preparation and planning before deciding on a solution that forecasts the quality in both tangible and intangible terms, as well as appropriate metrics to forecast future IT implementations. It's making senior management accountable for the solution investment, not IT, since they are the ones who need to communicate its value to shareholders.

JENNIFER PELTENBURG
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It seems to be the norm to lay off first and ask questions later. Those fortunate (or possibly unfortunate) enough to keep their jobs must continue adjusting to the incompetence of a few and the arrogance of others. How about a careful examination of your staff before making broad decisions on who stays and who goes?

When evaluating an employee's performance, consideration should always be given to how they do their job, as well as what they accomplish. We all know a high-performance employee who does not work well with others. The value they bring is not always enough to compensate for the damage they do to the environment.

As a manager, it's your job to fire them if it is for the good of the organization, regardless of how good a coder they are.

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The Education Crisis

It is sad to see that the most technologically advanced country in the world is falling so far behind in educating its young people in science and engineering ("The Education Crisis," Dec. 15, 2004/Jan. 1, 2005). With this rate of degradation, it will not take long for the United States to rely solely on foreign skills to sustain its technology pace.

I came to the United States 14 years ago. My children were born in this country. My oldest daughter is 13; I can't stress how much I want her to be math- and science-proficient. Fewer girls are pursuing science and engineering studies in the U.S.

As a U.S. citizen, I want to see this country stay strong. I always try to do something to improve the situation. As an IBM employee, I volunteered at schools where I presented the values of science and math to young kids, especially girls, to get them interested in these areas.

I wish the school systems in the United States and community and government organizations would start working to change the situation.

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Web-based applications are critical to your success. But the reality is, most aren't doing their job as intended.

They're compromised by performance issues, security fears and mushrooming costs that have nothing to do with their real role in life, and everything to do with trying to coexist with a network too focused on connectivity and not nearly adaptable enough.

Little wonder there's friction between a lot of application developers and network managers. And just adding another point solution, code fix or new addition to the server farm isn't going to improve things.

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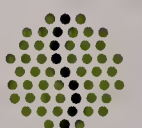


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trendlines

EDITED BY MEGAN SANTOSUS & ELANA VARON

NEW * HOT * UNEXPECTED

The IRS Makes Progress

UPDATE During the tax filing season that ended last month, the IRS processed some 1.3 million returns using its Customer Account Data Engine (CADE), a modern database of taxpayer records and the centerpiece of the agency's \$8 billion Business Systems Modernization (BSM) initiative. Taxpayers who filed the 1040EZ form electronically and were owed a refund (and did not change their address or other personal data) were issued their checks in an average of two days, compared with two weeks using the IRS's legacy database.

While CADE is being used for a mere fraction of the 200 million-plus returns from both individuals and companies that the IRS receives annually, it wasn't long ago that

the project was on the brink of failure. When we last wrote about CADE 13 months ago, its first release was nearly three years late and \$37 million over budget. Four other modernization projects were also behind schedule and bleeding money. IRS Commissioner Mark Everson was threatening to fire contractor Computer Sciences Corp. (CSC). (For the complete story, go to www.cio.com/050105.)

What a difference a year makes. Through a set of program management reforms, a new staffing strategy and a get-tough approach to vendor oversight, the IRS has delivered the initial version of all five systems. Only three projects (including the next version of CADE), are slated for development during FY06, beginning in October. "In the past, we



The IRS's \$8 billion modernization plan is on track, says CIO **W. Todd Grams**.

took on too much, too fast," says IRS CIO W. Todd Grams.

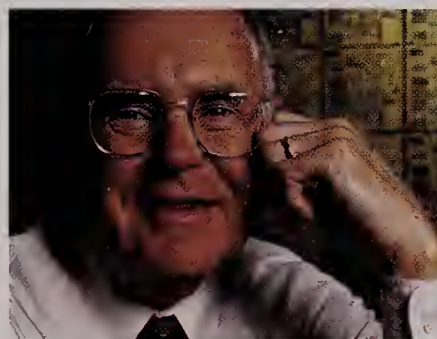
Under Grams, the IRS revamped its entire program management strategy. Among the changes, the agency has:

Continued on Page 22

How Green Was His Valley?

INNOVATION The region that gave birth to legendary startups Apple Computer, Cisco Systems and Hewlett-Packard may be seeing its influence wane. So believes Gordon Moore, one of the founders of Intel, who is considered by many to be a Silicon Valley legend himself.

Though Silicon Valley was once an unparalleled breeding ground of high-tech startups, things have changed in the nearly 35 years since Intel was founded. "Its uniqueness is not as great as it was in the beginning," Moore said at a recent event commemo-



Intel cofounder and Silicon Valley legend **Gordon Moore**

rating the 40th anniversary of the *Electronics* magazine article that first explained Moore's Law, which predicts that the number of transistors on a computer chip will double every two years. "Now

[the industry has] spread around to a lot of other places."

China, for example, is fast rising as a technology player. "We have very formidable competition in the world. I think the impact of China is just beginning to be felt," he said. "China is training 10 times as many engineers... Their technology is catching up fairly rapidly."

Chief among the challenges ahead for Silicon Valley is the relative weakness of the U.S. public education system, which Moore characterized as a problem for the entire country. Another

culprit: the notoriously high cost of living, which is making it increasingly difficult to attract new workers.

But Moore hasn't given up on the region or the industry. "Silicon Valley is still a great place to start a company," he said. "I expect the U.S. will still be a successful player, but I don't think it will enjoy the position it's had in the past 20 years."

And as for his eponymous law, Moore didn't offer any predictions as to whether it would still hold for another 40 years.

—Robert McMillan



Sit back, relax and enjoy **wireless multimedia entertainment** from the backseat of a taxi.

Cabs with a View

WIRELESS Taxi trips in some of the major metropolitan areas of the United States are about to get much more interactive, thanks to an advertising company that plans to roll out hundreds of wireless multimedia systems in cabs across the nation over the next few months.

Interactive Taxi, a subsidiary of Targeted Media Partners, plans to install interactive devices in the backseats of 850 cabs in Boston, Chicago and San Francisco, according to company CEO Corey Gottlieb.

The units consist of a wirelessly networked multimedia computer controlled by a touch screen.

Interactive cabs have been available in the United States for years now, but technical limitations have curbed their popularity, Gottlieb says. "We used to have 40GB hard drives in the trunk, but they were too big and also vulnerable to bumps," he adds. "Upgrading was also complicated."

Today the whole unit is mounted in the partition between the driver and the backseat and offers passengers news, restaurant listings and other information. The touch screen is connected to a 2GB flash drive running on Windows Embedded XP that receives updates from a central database.

Advertising is not the only force driving multimedia devices into cabs. By this fall, almost 13,000 cabs in New York City will have similar interactive devices, thanks to new regulations from the New York Taxi and Limousine Commission. "In November of this year, each medallion cab must be equipped with vehicle location technology and an interactive passenger information monitor," says Allan Fromberg, public relations chief of the City of New York Taxi and Limousine Commission.

The devices will help the Commission keep tabs on the location of New York's cabs, which will enhance the security of cab drivers and also make it easier for passengers to recover items left behind.

So, what do the drivers themselves think about the high-tech gadgetry? "It's cool," says Ted Ross, a Boston Cab driver.

—Johan Bostrum

IRS Progress

Continued from Page 21

*** Cut its budget.** This year, the IRS has a budget of \$203 million for modernization projects—48 percent less than in 2004—and has asked Congress to hold its funding steady. "The test of when we're ready to expand [again] is to prove that we can consistently deliver these projects on time and on budget," says Grams. Among the projects on deck: adding functionality to CADE for processing other versions of the 1040 form, and enhancing online filing capabilities for corporations.

*** Hired more experts.** In the past, the agency relied too heavily on career IRS executives who knew the legacy environment but had little experience deploying new technology. Now five out of the eight executives in charge of BSM-related activities have come from the private sector, where they deployed high-volume transaction systems.

In addition, says Richard Spires, the IRS's associate CIO for BSM, the agency is hiring 10 systems engineers whose job it will be to make sure new systems are integrated properly with the legacy applications that remain.

*** Made business unit leaders accountable.** The business executive in charge of each project has to sign off on each development milestone. Their salary increases now are riding on whether these projects are delivered on time and within budget.

*** Toughened vendor oversight.** Everson and Grams meet monthly with

CSC's COO to discuss the company's performance. Grams and Deputy Commissioner for Operations Support John Dalrymple hold more frequent meetings with the CSC executives responsible for the agency's contract. Meanwhile, the IRS has revamped its various contracts with CSC so that either work is done for a fixed price or CSC's pay is linked to its performance.

As a result, says Jim Sheaffer, the CSC vice president and general manager in charge of the contract, "it's forced us and the IRS to be more specific and detailed about whether the events we measure are achieved or not."

David Powner, director for IT management issues with the Government Accountability Office, says these steps denote progress. An indicator of whether the changes are sticking, Powner says, will be whether the agency delivers the next few installments of CADE—one due every six months—on time.

Meanwhile, there's more to do. GAO wants the IRS to conduct more detailed post-implementation audits in order to record lessons for future projects. And Grams says the agency is in the midst of a cultural shift as it turns new systems over to legacy operations managers. That "remains one of our challenges," says Grams. "We need to make the case to all of our employees that modernization involves everyone in the IS organization."

—Elana Varon

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What CEOs Want: A Strategic CIO Who Keeps the Lights On

MANAGEMENT REPORTS

Of all the CIO's many audiences, the CEO is surely the most important. Yet a recent survey of CIOs and their CEOs at a cross-section of Fortune 500 companies uncovered discrepancies in how the two executives view the role of the CIO.

Beverly Lieberman, president of executive recruiting firm Halbrecht Lieberman Associates, interviewed more than 25 CIOs and CEOs last year from a variety of industries and geographic regions. Among most of the pairs interviewed, the CIO reported to the CEO. Each executive answered a set of questions about the CIO's role in the organization, critical skills

and development methods.

All of the CEOs said they viewed the CIO role as strategic. CIOs responded likewise; they felt they were expected to understand and contribute to the business strategy.

But when the CIOs in the survey talked about their day-to-day responsibilities, most said the majority of their working hours went to operational concerns such as consolidation plans, outsourcing, quality programs and cost management. That sounds much more tactically oriented than strategic, notes Lieberman. A similar discrepancy came from the CEOs' metrics for CIO success. Most said they evaluate

CIO performance through operational metrics such as time, cost and value added, as well as strategic indicators such as an ability to work with the board of directors.

Lieberman concludes that in many companies, CIOs are an untapped source of strategic ideas. A less positive spin on the findings would be that CEOs will never tap their CIOs for strategic ideas and that the CIO

role is one of supporting and enabling the business. But Lieberman bases her conclusion on her in-depth interviews with CIOs in the study. They spoke at length and in detail about innovation, growth and adding value. For these CIOs, a strategic role is within reach; their CEOs are receptive to it, and their companies need them to take it on.

—Edward Prewitt



TRENDLINES

Send Your Cattle Prods Ahead

KIOSKS “Can’t take it with you? Mail it instead,” reads a sign posted on one of ReturnKey Systems’ Automated Mailing Kiosks (AMKs) in the Newark Liberty International Airport. Thanks to ReturnKey and the company’s AMK system, airline travelers no longer must forfeit personal items to the Transportation Security Administration, which since 9/11 has been commissioned to keep airlines free of any potential weapons. With the kiosks, items that would’ve been confiscated can now be mailed ahead.

The AMKs look much like ATMs. There’s a touch screen where users can enter information and access directions, along with a mail slot for sending packages. To use the system, a user first enters personal information, such as a name and address, which is verified against United States Postal Service records. (If the information doesn’t match up, the user cannot proceed.) Next the user identifies the article he wishes to send, which the system then checks against an extensive list of items prohibited by the postal service. If the item is accepted for mail delivery, the system takes a picture of

the user that gets sent to an offsite location for storage and scans the user’s credit card for payment. Finally, the user inserts the item into a depository.

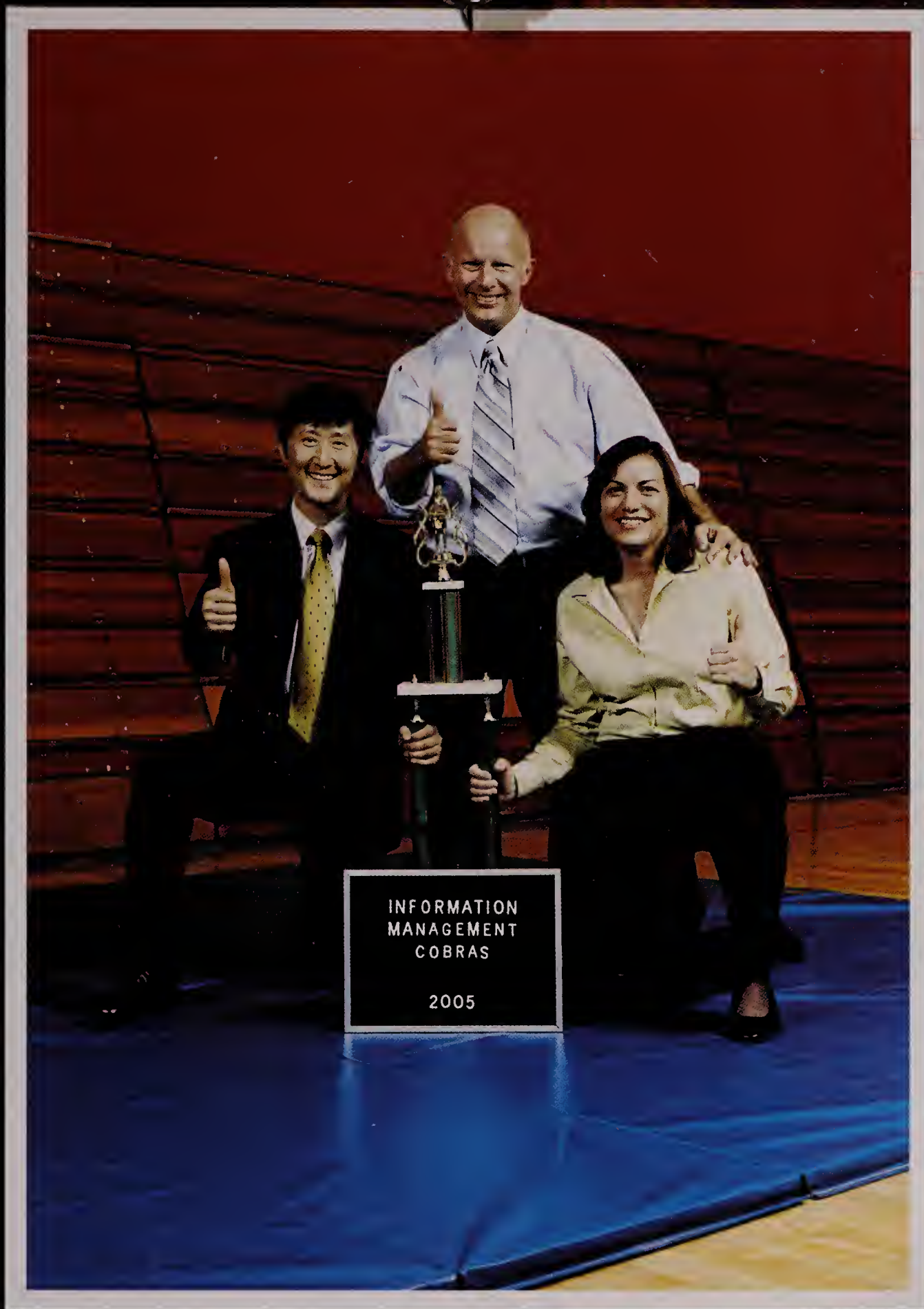
Though there is currently no insurance available, customers receive a USPS tracking number that can be used in coordination with the USPS website to locate their belongings during shipping. It costs anywhere from \$6 to \$22 to use the AMKs, depending on the item’s size, weight, postage and the handling fee, and can take as little as two minutes to complete the entire process. AMKs can send items only domestically, but Steve Kranyec, ReturnKey’s president and founder, says that international mailing should be available soon.

As of March, AMKs were installed in five airports, including LaGuardia, Newark and Dulles. According to Kranyec, the company “is in discussions” with a number of other U.S. airports. The system has been a hit with the TSA as well as with customers because the AMKs eliminate confrontations between frazzled travelers and security and airline personnel.

—Al Sacco



An Automated Mailing Kiosk enables airport users to send prohibited items via mail.



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Cutting Costs Can Cost Customers

OUTSOURCING Companies that outsource customer service functions with the goal of reducing costs may risk reducing their client list as well, according to Gartner.

The researcher predicts that through 2007 some 80 percent of organizations that outsource customer service projects with the primary goal of cutting costs will fail in that attempt. One factor is the high staff attrition rates at outsourcing companies, sometimes as much as 80 percent to 100 percent.

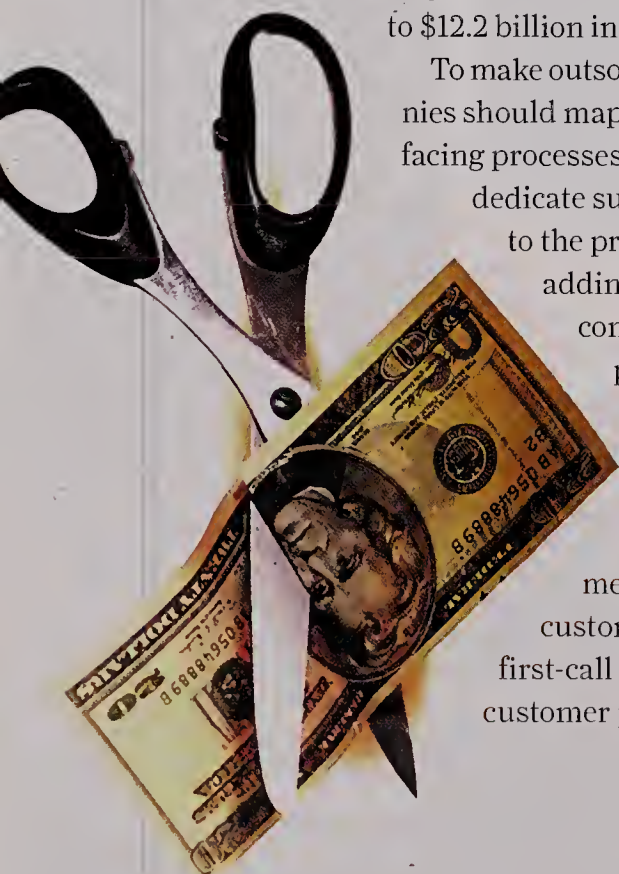
"Companies are not looking at processes from a customer point of view, and this is risky," says Gartner Vice President Alexa Bona. Customer-facing processes, such as call center services and tech support, require specific training and management to prevent client loss, she adds.

Gartner predicts some 60 percent of organizations that outsource customer-facing functions will experience client defections due to service issues, a hidden cost that outweighs any potential cost savings. Indeed, Gartner found that companies employing outsourced customer service processes could pay more; the average monthly cost per employee is 30 percent higher for outsourced operations than the top 15 percent of companies pay for in-house operations, Bona says.

In spite of the poor outlook, Gartner predicts the market for customer service outsourcing will grow from \$8.4 billion in 2004 to \$12.2 billion in 2007.

To make outsourcing work, companies should map their customer-facing processes from end to end and dedicate sufficient management to the projects, Bona says, adding that outsourcing contracts should contain provisions that allow the outsourcing company to be paid based on nontraditional metrics such as customer satisfaction, first-call resolution and even customer profitability.

—Scarlet Pruitt



The Replacements

ON THE MOVE **Evon L. Jones** succeeded Marie L. Smith as corporate vice president and CIO of contact lens maker Bausch & Lomb. Jones comes to the company from consumer products maker The Dial Corp., where he served since 2001 as senior vice president and CIO.

Scott Thompson replaced Chuck Geiger as senior vice president and CTO of online payment provider PayPal. Thompson reports to PayPal President Jeff Jordon and eBay COO Maynard Webb. (PayPal was formed by eBay.)

Speaking of eBay, **Chris Corrado** joined the online auction company as its senior vice president and corporate CTO. Corrado will also report to Webb.

At media and marketing research company Arbitron, **Vaughan Scott Henry** replaced Janice Giannini as executive vice president and CIO.

Also Making Changes

Doug Cormany left staffing company Spherion "to pursue other interests," according to a company press release. William G. Halnon replaces Cormany as senior vice president and CIO. Halnon joins Spherion from Dimon, a leaf tobacco dealer, where he was CIO.

Rajiv Donde resigned from VantageMed, a provider of health-care IT, "to pursue other opportunities," according to a company press release. Mark Cameron succeeded Donde as the company's new CIO. Cameron comes to VantageMed from health insurance provider Beech Street where he was senior vice president of product development.

Steve David picked up his first gig since retiring from Procter & Gamble at the beginning of January. In February, he joined management consulting firm The Boston Consulting Group as a senior adviser. David was in effect replaced as CIO of P&G by Filippo Passerini, who was appointed chief information and global services officer by the company on July 1, 2004, in tandem with a realignment of the consumer packaged goods company's business units.

Fabric and craft retailer Jo-Ann Stores hired **Gertrude G. Van Horn** as senior vice president and CIO. She comes to the retailer from Office Depot, where she most recently served as the office supply company's vice president of global information delivery systems. It just so happens that Office Depot's CIO, Patricia Morrison, serves on Jo-Ann Stores board of directors.

Robert Moon leapt from visual display maker ViewSonic to the CIO post at LeapFrog Enterprises. He joined the maker of educational toys at a difficult time; in February, LeapFrog announced that it lost \$8 million during 2004 and that it would eliminate more than 180 jobs from its worldwide workforce.

—Meridith Levinson



EVON L. JONES
Corporate VP and CIO
at Bausch & Lomb



SCOTT THOMPSON
PayPal's Senior VP
and CTO



VAUGHAN SCOTT HENRY
Executive VP and
CIO at Arbitron



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An Accidental CIO Calls It a Day

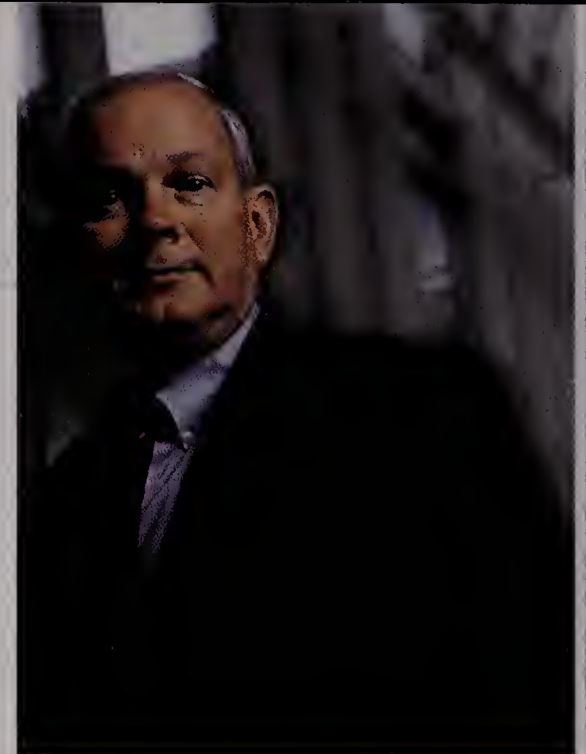
CAREERS Nine days before Ken Lacy retired as CIO of UPS in February, he had already cleaned out his office. Gone were the mementos of his 37-year career at UPS. What remained was a lone, colorful impressionistic painting, which hung behind him. Lacy is a humble, soft-spoken man who has tried to avoid any limelight during his eight years as head of UPS's IT. A UPS lifer who began at 18 as a clerk in a package center, Lacy prefers not to speak publicly, talk to the press or tout all that he has accomplished. He's a lot like the rest of UPS's upper management: equal measures of humility and quiet confidence.

Lacy took over for Frank Erbrick, UPS's first CIO, in 1996, after installing a good measure of IS discipline and methodologies in UPS's expanding business lines. Lacy had been working in the finance side when Erbrick gave him a speech similar to the one that Lacy gave Dave Barnes, UPS's new CIO. "Frank came to me and said, 'I'd like to give you an opportunity to work for

me in IS,'" Lacy recalls. Erbrick didn't make any promises to Lacy about the top IT spot; he just gave Lacy an opportunity to prove himself worthy. Lacy had believed his future was in finance. But after giving the offer some thought over the weekend, he signed on.

The duo worked together for two years, and then Lacy became CIO, guiding the IS department's growth (from 100 or so employees when he took over to more than 4,000 when he retired) and the business's expansion into Web and international areas. "Six or seven years ago, we didn't call UPS a technology company; we called it a transportation company," Lacy says. "Now we're saying we're a technology company that does supply chain and transportation with one of the biggest airlines in the world."

Lacy says he was driven by a methodical and disciplined approach to managing UPS's billion-dollar IT department. "Being a bean-counter made me successful," he



Retired CIO **KEN LACY** signed off after 37 years at UPS.

says. "In IT you can spend—very easily—an awful lot of money and not have the right projects in place." Lacy is satisfied with his choice of Barnes and with UPS's succession planning process. "It's kind of nice because you see all the pieces. It's almost like a puzzle, and you're seeing all the pieces come together," he says. (For more on UPS, see "Nothing Succeeds Like Succession," Page 56.)

After his last day on Feb. 11, 2005, Lacy headed off to ski in Colorado. And rest assured, he won't be waiting by the phone for a call from UPS's Atlanta headquarters. "One thing...once you walk out the door, you never get a call," he jokes.

—Thomas Wailgum

“Being a bean-counter made me successful. In IT you can spend—very easily—an awful lot of money and not have the right projects in place.”

—Retired UPS CIO Ken Lacy

Room for Improvement

ALIGNMENT In a recent survey of more than 1,400 midsize organizations in the United States, Canada and the United Kingdom conducted by Info-Tech Research Group, 95 percent of respondents said their IT departments are failing to deliver projects either on time or that meet the expectations of business executives. It should hardly come as a surprise, therefore, that only 11 percent of the organizations that responded view technology as a "strategic weapon."

"The fact that almost every IT department is failing on some of their projects is both a major contributor to, and a major symptom of, the misalignment of business and IT," says Frank Koelsch, executive vice president for corporate strategy and research at the Info-Tech Research Group.

According to "IT Priorities 2005," a survey by Info-Tech Research Group, organizations cited these top three reasons that projects fail.

Unrealistic time frames **68%**

Insufficient staffing **64%**

Poorly defined project scope **62%**

(Organizations could select more than one answer.)

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A Team Starts with Two

The best way to develop employees is one-on-one coaching, yet too few executives seem interested in making the effort



If you want to dramatically improve the performance of your team, get to know them as individuals. Effective leadership, in the words of emotional intelligence guru Daniel Goleman, requires that you understand people's "perspectives, their hopes and dreams"—and that you present them with "a challenge that leads them in the direction where they want to be moving anyway."

Although most leaders talk the talk about the importance of developing others, their actions demonstrate that they are mostly interested in developing themselves. When I challenge executives to tell me about the people they depend on to make them successful, I get little insight and a lot of guilt. Leaders have to know more than the names of spouses and ages of kids; they need to understand the employees who are entrusted to their care—their dreams, disappointments, goals, motivations, fears and the activities that build (and drain) their energy.

If leaders benefit by developing others, and developing others requires insights into what motivates them, then why don't more executives take the time to understand individuals' interests and link them to the enterprise's interests? Goleman says one-on-one coaching is the least used tool in the managerial toolkit because most executives think a conversation about an individual—rather than about a shared task—"doesn't look like leadership."

In my executive coaching work, I find that few people conduct effective, one-on-one development conversations with their direct reports. Many feel ill-equipped to conduct these conversations or don't believe that soft insights will lead to hard results. For those who say that it is each individual's responsibility to manage his or her career, I would respond that it is unrealistic



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to expect employees who are less experienced, less powerful and less self-aware to initiate “meeting of the minds” conversations.

Without productive one-on-one conversations, the organization suffers. Succession planning efforts break down because leadership development plans for “high potentials” are driven from a top-down assessment of the needs of the enterprise. In effect, these plans assume the individual wishes to be developed in whatever direction the organization deems necessary.

I believe that leaders are made, not born, and that managers are responsible for creating challenges that motivate and experiences that teach their employees. There’s a great book titled *Leader as Coach: Strategies for Coaching & Developing Others*, published by HR consultancy Personnel Decisions International. It outlines the steps necessary to form a development partnership: First, help the individual identify his or her “motivational gap” (defined as an “important difference between where you are and would like to be”); second, create a plan to guide the development process.

The motivational gap is identified from information on an employee’s abilities (from his own point of view and others’, typically gathered in a 360-degree assessment), his goals and values, and the success factors of others (including the enterprise). For many of my clients, their motivational gap is the difference between the abilities they have and the ones they need to attain their goals. For others, it is the change necessary to move them into a role more consistent with their values or more strategic to the enterprise. The science of the motivational gap is less important than the art of what happens during one-on-one conversations in which the leader gets to know the employee and seeks to understand rather than to be heard.

Leader as Coach outlines the respective roles of the development partnership. The supervisor agrees to act as a coach by working one-on-one, orchestrating resources and learning opportunities, and providing encouragement for learning and focus. The direct report agrees to assume primary responsibility for his or her development by setting priorities, accepting new challenges, testing new behaviors, reflecting and extracting learning, and seeking feedback and support.

If this sounds like a big-time commitment, it is. It takes work to create relationships in which direct reports are willing to be vulnerable and insights can be jointly formulated. In organizations that churn and burn people, it’s unlikely that leaders will benefit directly from these efforts. But for those CIOs who take the long view and understand that great leadership can enhance the lives of those they lead, I encourage you to take a deep breath and sit down one-on-one with the top 20 percent (to start with) of your leadership team.

On the business side, the relationships formed will enhance your ability to create strategic visions, build loyalty and foster commitment. On the personal side, these relationships will enhance your own life and outlast the impact of any other priority currently on your desk.

Reader Q&A

Q: In a culture where management is not open to such developmental mentoring or collaboration with subordinates, how can this approach be employed? Or is that impossible?

A: The answer depends on your role. If you are a leader who understands the importance of developmental mentoring and collaboration but who works within an organization that does not, you are free to do what you want. Those outside your group will not be involved in your one-on-one coaching discussions and will not recognize how you are getting your results—just that you do so.

As a subordinate, you have three choices. You can leave the organization (rather dramatic, I would say). You can seek out leaders who are coaching their people and try to work for them—or at least benefit from their mentoring. Last, but definitely not least, you can find coaches or mentors outside your organization who will assist you. Many professionals call a coach because they are not able to get help within.

Q: What would you recommend if my direct reports’ goals are not in sync with the goals of the organization (and they are not willing to change their goals) and are not achievable within the expected duration?

A: The goal may not be in sync with the organization, but the skills and knowledge necessary to move toward the goal can

most likely be developed within the organization. For example, for an IT executive who wishes to start his or her own business, there is a wealth of

Have a Leadership Question?

For more reader questions and answers from Susan Cramm, go online to www.cio.com/leadership.

CIO.COM

important knowledge about business planning, relationships, sales and finance in most companies. Help your people find roles that build the skills they need, and you will most likely never lose them.

Most goals articulated by your direct reports will not be achievable within the time frame they expect. Many times, people grind away, expecting rewards to come, without ever having a conversation with their manager or mentor. They aren’t getting feedback or help with articulating their goals or determining what roles or assignments would facilitate their growth. By the time they finally voice their expectations, they are frustrated and expect immediate action. **CIO**

Susan Cramm is founder and president of Valuedance, an executive coaching firm in San Clemente, Calif. You can e-mail feedback to susan@valuedance.com.



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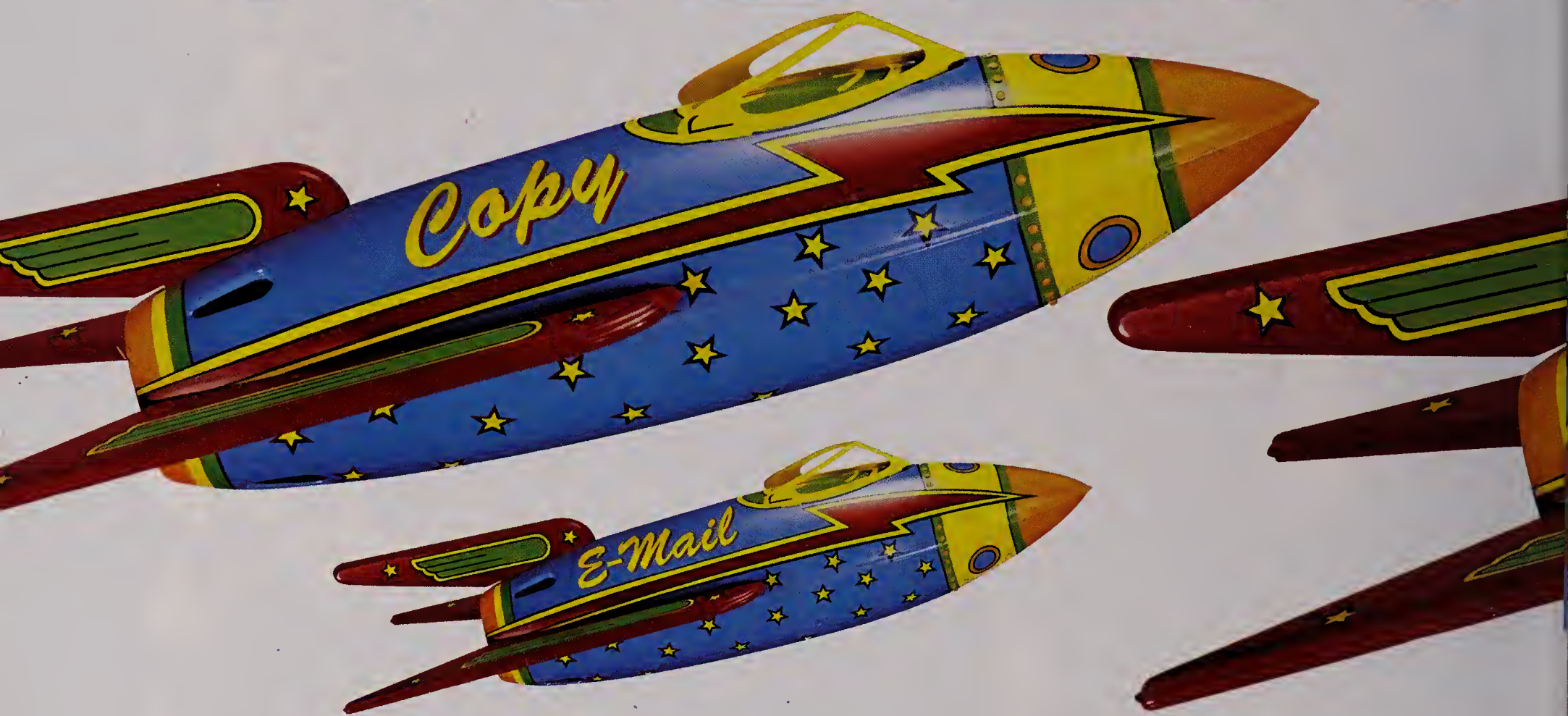
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How to Salvage Your Company's Deep Smarts

The approaching exodus of retiring baby boomers will severely erode the knowledge base of many companies. Fortunately, there are ways to re-create this crucial expertise.



Around the nation, the deep smarts of our organizations are walking out the door. Deep smarts are the contents in the heads of experts that enable them to make swift, wise decisions based on years of experience. A number of trends threaten to converge into a perfect storm of knowledge loss, especially in the technical- and science-based occupations. While the percentage of highly skilled workers made up of foreign-born scientists and engineers has steadily increased in the past two decades, their native countries now want them back. Post-9/11 security concerns have also made it more difficult to attract highly skilled foreigners to the United States.

And then there is the approaching mass exodus of retirees. In many industries, these employees have knowledge that is essential to organizational success. But financially strapped companies are doing increasingly less on-the-job training, which is essential for transferring these deep smarts to the next generation. In *Deep Smarts: How to Cultivate and Transfer Enduring Business Wisdom*, Walter Swap and I argue that leaders need to identify, nurture and transfer the know-how comprising the engine of their organizations. [To read an excerpt from the book, go to www.cio.com/050105.] Every organization has a few key members whose departure would devastate operations. Of course, not all retirees have a knowledge treasure buried in their craniums. And even those who do are subject to the same social and psychological biases as the general population, biases that can sometimes blind our judgment.

But people with deep smarts can be indispensable. Why? Because their particular brand of expertise is based on long, hard-won experience. They are the go-to people known for their



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swift, seemingly intuitive judgments. Such experts differ from their less experienced colleagues in having the ability to view a problem at a system level and yet dive into the details when necessary—and identify a familiar pattern.

Consider the example of a rocket scientist who saved the day because of his deep smarts. In the early 1980s, his company was competing with another for a U.S. government contract to produce tactical missiles, worth billions of dollars over the next 30 to 40 years. Each competitor tested six working prototypes; none was satisfactory. The scientist, who was not an official member of the project team, called the primary participants to a meeting. He proceeded to awe the assembly by proposing detailed changes that he had worked out by himself during just one week of concentrated effort. Without notes, for several hours, he walked them through the redesign—from the weapon point to its aft—explaining all the software, wiring and hardware changes that would be required to win the competition. His changes were supported and the company won the contract.

It *was* rocket science, but the scientist didn't get deep smarts from his formal education alone. His kind of expertise accrued over 20 years of working on all different components of the missiles. In this example, the knowledge that could be lost was not only particular to the industry but also proprietary to the company. When such individuals retire or leave, the company suffers a blow from which it may take years to recover.

Re-creating Deep Smarts

Not all deep smarts are this proprietary, nor are they all technical. Managerial, organizational or interpersonal skills and judgment can also be critical. Whatever the domain of the deep smarts, however, a critical issue for organizational leaders is how such knowledge can be passed along to colleagues with less expertise. Since so much of the expertise is tacit—that is, not articulated or documented—and because it therefore exists mostly in the heads and hands of the experts, it can't be readily shipped from one brain to another.

In fact, Walter and I argue that deep smarts can't really be transferred at all. They must be re-created through the process of guided experience. Based on a three-year study of the transfer of knowledge between coaches and relative novices, we propose at least four kinds of guided experience: practice, observation, problem-solving and experimentation. The emphasis is on guided because all four of these produce deeper smarts in the learner when a knowledge coach interacts extensively with the novice, helping to plan, implement and review the learning experience.

Even the best athletes seek practice under the guidance of an expert coach. But two kinds of observation are also important: shadowing and mind-stretching. Shadowing, as the term suggests, is allowing junior staff to follow more experienced operators around, observing actions, speech, decision making—and

Deep smarts can't really be transferred. They must be re-created through the process of guided experience.

then having them discuss their observations with the experts. A more provocative form of observation is to assign learners to a series of unusual experiences designed to challenge assumptions and enlarge worldviews. For example, when Best Buy top management determined that they needed to build an innovative capability in the company, they hired consultancy Strategos. The consultants' task was not the usual "analyze and report," but to coach teams of Best Buy employees through a series of mind-stretching experiences—including travel to destinations as diverse as computer game arcades in Seoul, Korea, and the American Girl store in Chicago (specializing in historical dolls). These direct experiences with foreign environments challenged team members' assumptions about the purpose and design of products, and led to some radically innovative ideas. For example, could Best Buy design a socially desirable place for communal use of computers that would have the powerful allure of a destination (such as American Girl) and (like the game arcades) attract a much younger set of users than usual?

Another mode of re-creating deep smarts is joint problem-solving by expert and protégé. Deep smarts are, by their nature, contextual: Experts are often unaware of how they solve certain problems and cannot readily bring up a mental list of all possible strategies and outcomes. Their deep smarts are activated by the situation at hand. By working together, the protégés learn how the experts approach a problem—including using personal networks to narrow the search for information—and the experts often stretch their own mental boundaries.

Finally, guided experimentation is essential when there is no certain knowledge, as is so often the case with swift-changing technology and markets. The Best Buy teams mentioned earlier had to test their ideas out in small market experiments before they could judge their worth. Therefore, they opened a prototype "Bang" computer game arcade to teenagers and carefully observed what ideas worked, from helping customers mix to providing snack foods.

The solution to losing deep smarts, in short, is to invest in their re-creation. If the United States is not to lose its world pre-eminence, we suggest that we need to take the accelerating loss of such knowledge seriously and begin to staunch the flow. **CIO**

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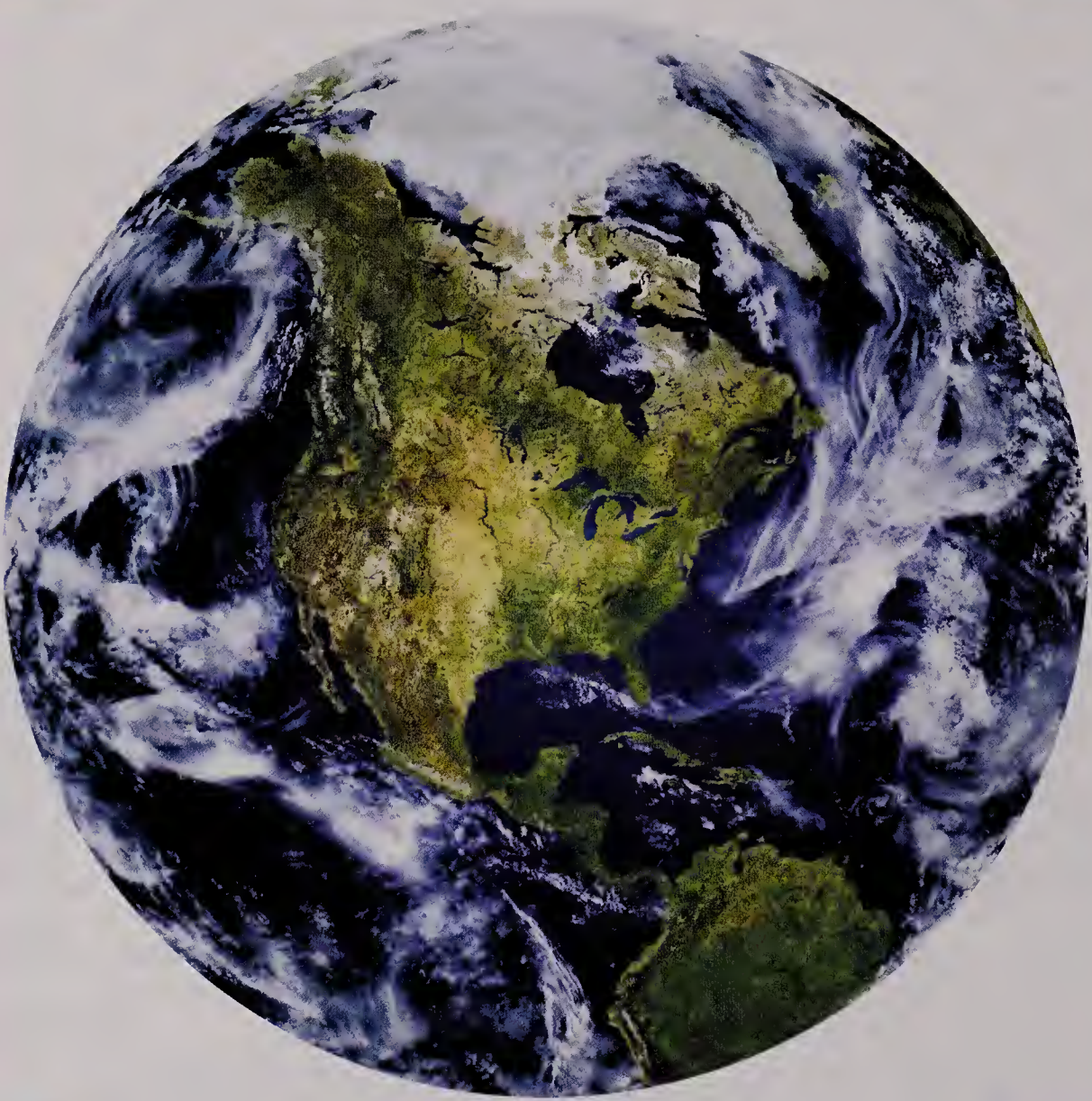
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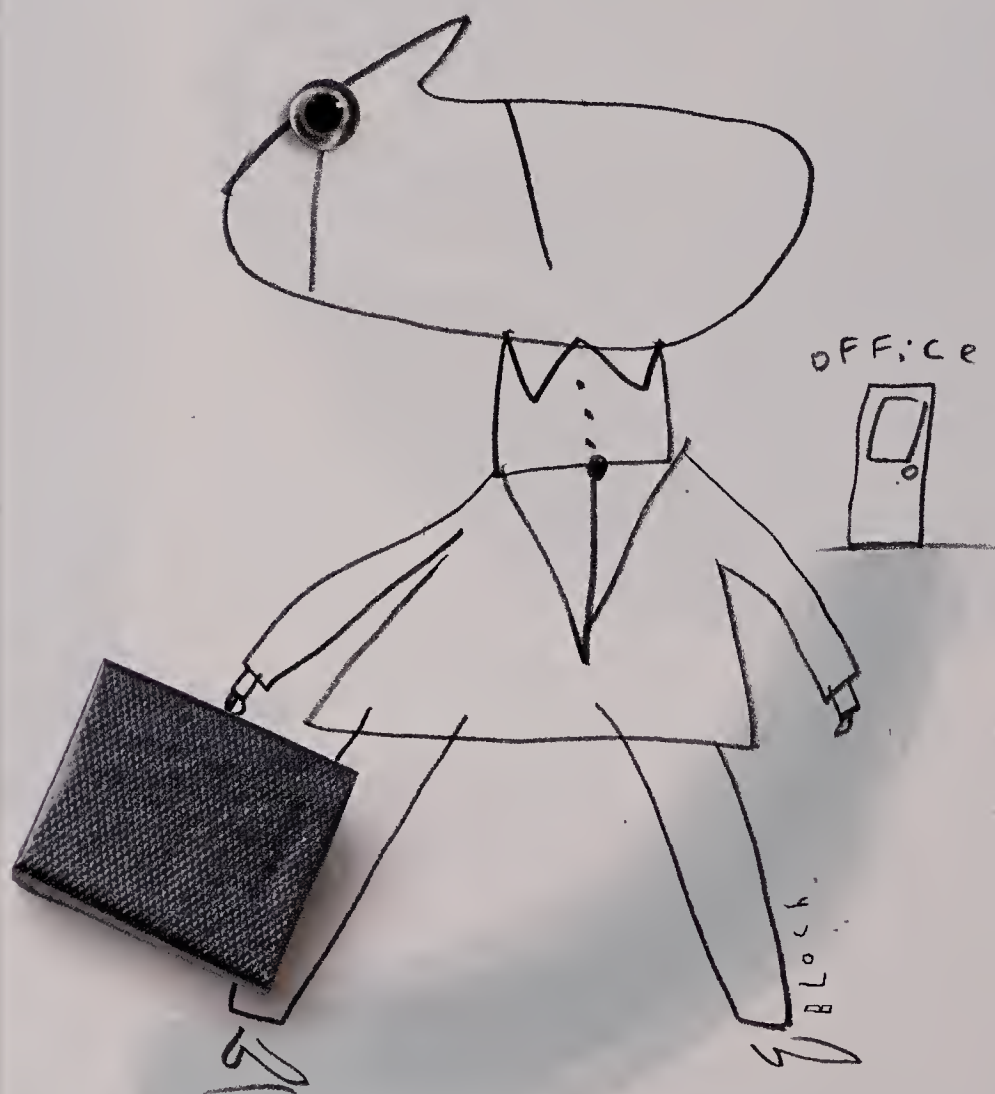
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No Fun of Any Kind

We tend to take our jobs—and ourselves—much too seriously, which is why we often don't enjoy either very much **BY MEGAN SANTOSUS**



When was the last time you had fun at work? If the first thing that comes to mind is that all-you-can-eat holiday buffet in 1999, then you need to get a life.

Or, more to the point, you need to get a new job.

For many, the word *work* retains the atavistic connotations of pain, drudgery and danger that pretty much summed up the historic lot of all but the most fortunate. Luckily, for most of us, the character and nature of work has changed profoundly.

Look around you. What are the chances of a boulder falling on your head? A maddened bull charging into your office? The boss deciding to stretch you on the rack until you produce that third-quarter report? Slim, wouldn't you say? But far too many people approach work with the same sense of dread that their ancestors felt when these aforementioned hazards were quite real. And far too many people still believe that work should not, under any circumstances, be fun. It should be, well...work.

Mike Veeck thinks there's something seriously wrong with that attitude. Veeck has a hand in the ownership of six minor league baseball teams and has just written a book called *Fun Is Good*, which nicely sums up both his philosophy and his marketing strategy. As president of the Goldklang Group, the company that operates the minor league teams, Veeck has been instrumental in turning several money-losing baseball franchises into a profitable, \$25 million business. He's done this, in part, by emphasizing the importance of customer service and by emphasizing fun. In addition to his baseball business, Veeck runs seminars and provides consulting services that, again, focus on fun because fun, Veeck believes, is good for business.

By fun, Veeck doesn't mean being silly or having a laugh riot

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from 9 to 5. At its most basic, fun entails experiencing a deep enjoyment in what you're doing.

In short, if you're having fun at work, then you like your job, and you're probably good at it.

If you're not, you don't, and you're probably not.

While there's no meter that can gauge how much fun people are having on the job, there are other ways to take the office temperature. There's morale. When morale is on the skids, there's a pretty high probability that people aren't having fun and are not doing a good job. And in a survey conducted by Meta Group last year, morale among IT workers was at an all-time low, with 72 percent of IT organizations reporting a morale problem. Then there's stress, which tends to be antithetical to fun. In a recent study by the Families and Work Institute, 54 percent of American employees surveyed said that they felt overwhelmed at some point in the past month by the amount of work on their plates.

Are we having fun yet?

Mr. Big Shot, Who Do You Think You Are?

As Veeck sees it, an inability to have fun at work is a surefire sign that we're taking ourselves too seriously. "We're all enamored with the idea that what we're doing is terribly important," Veeck says, meaning, by extension, that *we're* terribly important. And people who consider themselves terribly important tend not to be able to laugh at themselves. In fact, they tend to be suspicious of all laughter because it undercuts their sense of self-importance and casts doubt on the importance of whatever they're doing. Joel Goodman, director of The Humor Project, a consultancy that teaches organizations how to promote humor as a means of increasing productivity and creativity, believes the absence of laughter in the work environment is a bad thing. Humor, says Goodman, is a coping mechanism. Studies indicate that when a person laughs, the "immune system is given a boost, stress-related hormones such as cortisol are reduced, and our respiratory systems are improved." In short, humor enhances our ability to deal with life's inevitable difficulties.

It's like exercise, but without the sweat and spandex.

Veeck and Goodman find the absence of fun and laughter in the workplace distressing. Veeck is amazed by the number of people who work at jobs they detest. "I hear it all the time," he says. "I wonder why they just don't do something else."

Perhaps it's too easy for Veeck to say that. He gets paid to hang around ballparks. But running a baseball team is work. Essentially, baseball is just another business in the hyper-

competitive world of entertainment; Getting fans into the seats means going head-to-head against movies, television, video games or any other of the myriad distractions competing for our leisure time. What perhaps sets baseball apart from say,

If you're having fun at work, then you like your job, and you're probably good at it. If you're not, you don't, and you're probably not.

the insurance business, is that fun is supposed to be part of the experience. The more festive the atmosphere, says Veeck, the more people will spend on food, drinks and merchandise. (His father Bill invented the exploding scoreboard in the old Comiskey Park and once signed the 3-foot-8-inch Eddie Gadel to the roster of the old St. Louis Browns. You could look it up.)

Goofy Leadership

That same sense of fun can translate into success for any kind of business. While Veeck is quick to advocate a career change for anyone stuck in a soul-destroying job, that's not a practical choice for many people responsible for their family's financial well-being. If that's your situation, then it's important to your psyche (as well as to those of the people who work for you) to try to infuse the workplace with a bit of levity.

It all starts, say both Veeck and Goodman, with ditching that sense of your own importance. For business leaders, Goodman admits, that may not be so easy. Business, after all, is about money, and it just doesn't get much more serious than that. Yet for nearly 30 years, The Humor Project has helped a diverse group of clients—ranging from the Boston Public Schools to GE, GM and Time Warner—find ways to instill humor in the workplace. One simple technique, Goodman suggests, is to diffuse the fear of failure (a huge stress generator) by celebrating mistakes. As the gold standard for creating a positive environment, Goodman cites Southwest Airlines, a company that actively encourages employees to have fun on the job. It practically mandates it, and it's not a coincidence, says Goodman, that Southwest's reputation for being a fun place to work has translated into business results. Since 1987, the airline has consistently logged the fewest customer complaints according to the Department of Transportation's Travel Consumer Report.

Having fun does not exclude being serious about your work and being serious about doing a good job. "It's good to care about what we do and why we do it," Goodman says. But being serious and caring is very different from being humorless and solemn. A humorless, solemn leader will make fun about as welcome at your office as a hostile takeover. Stress will get the best of you and your staff.

And then, the only ones who will have fun will be your competition. **CIO**

Former Senior Editor Megan Santosus is out there, somewhere, having fun.

Are You Having Fun Yet?

How do you make work fun when sometimes it isn't? Share your tips in the **ADD A COMMENT** section at the end of this piece online.

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BOUND TO FAIL

The crash of a critical legacy system at Comair is a classic risk management mistake that cost the airline \$20 million and badly damaged its reputation. Here's how to avoid that fate.

BY STEPHANIE OVERBY

When Eric Bardes joined the Comair IT department in 1997, one of the very first meetings he attended was called to address the replacement of an aging legacy system the regional airline utilized to manage flight crews. The application, from SBS International, was one of the oldest in the company (11 years old at the time), was written in Fortran (which no one at Comair was fluent in) and was the only system left that ran on the airline's old IBM AIX platform (all other applications ran on HP Unix).

SBS came in to make a pitch for its new Maestro crew management software. One of the flight crew supervisors at the meeting had used Maestro, a first-generation Windows application, at a previous job. He found it clumsy, to put it kindly. "He said he wouldn't wish the application on his worst enemy," Bardes recalls. The existing crew management system wasn't exactly elegant, but all the business users had grown adept at operating it, and a great number of Comair's existing business processes had sprung from it. The consensus at the meeting was that if Comair was going to shoulder the expense of replacing the old crew management system, it

Reader ROI

- :: How Comair IT took its eye off the risk management ball
- :: Why Delta, its parent company, shares the blame
- :: How to get your legacy system replaced and avoid Comair's mistake



should wait for a more satisfactory substitute to come along.

And wait they did. The prospect of replacing the ever-maturing crew management system was floated again the following year, with plans laid out to select a vendor in 2000. But that didn't happen. Over the next several years, Comair's corporate leadership was distracted by a sequence of tumultuous events: managing the approach of Y2K, the purchase of the independent carrier by Delta in 2000, a pilot strike that grounded the airline in 2001, and finally, 9/11 and the ensuing downturn that ravaged the airline industry.

A replacement system from Sabre Airline Solutions was finally approved last year, but the switch didn't happen soon enough. Over the holidays, the legacy system failed, bringing down the entire airline, canceling or delaying 3,900 flights, and stranding nearly 200,000 passengers. The network crash cost Comair and its parent company, Delta Air Lines, \$20 million, damaged the airline's reputation and prompted an investigation by the Department of Transportation.

Chances are, the whole mess could have been avoided if Comair or Delta had done a comprehensive analysis of the risk that this critical system posed to the airline's daily operations and had taken steps to mitigate that risk. But a look inside Comair reveals that senior executives there did not consider a replacement system an urgent priority, and IT did little to disrupt that sense of complacency. Though everyone seemed to know that there was a need to deal with the aging applications and architecture that supported the growing regional carrier—and the company even created a five-year strategic plan for just that purpose—a lack of urgency prevailed.

After the acquisition by Delta, former employees say Comair IT executives didn't do the kind of thorough management analysis that might have persuaded the parent airline to invest in a replacement system before it was too late. Instead, Delta kept a lid on capital expenditures at Comair, with unfortunate consequences. The failure of the almost 20-year-old scheduling system not only saddled Delta with a plethora of customer service and financial headaches that the airline could ill afford but it also provides a cautionary tale for any company that thinks it can operate on its legacy systems for just...one...more...day.

THE FIVE-YEAR PLAN THAT WASN'T

Today, Cincinnati-based Comair is a regional airline that operates in 117 cities and carries about 30,000 passengers on 1,130 flights a day, with three or four crew members on each. But back in 1984, when Jim Dublikar joined the company as director of finance and risk management, Comair had just 25 airplanes and not a jet among them. Dublikar, who served as Comair's director of risk management and information technology from 1992

"Before Delta came in successful regional

until 1999, explains that back then, flight crew managers did all their scheduling with pen and paper. But in 1986, Comair leased software from SBS that kept track of crews, the flights they were assigned to and how many hours they were flying, in order to be in compliance with union and federal regulations.

The system worked just fine.

In 1993, Comair bought a jet—the first Bombardier CRJ regional jet in the industry, in fact. The company grew swiftly. But by 1996, other regional contenders such as American Eagle, Mesa and Continental Express acquired their own jets, and Comair lost its competitive advantage. "At that point, the playing field had gotten pretty even," says Dublikar, now an airline consultant. "So we had to start looking at ways of doing things better and more efficiently."

Over the years, Comair, like most airlines, had acquired a hodgepodge of applications—from crew scheduling to aircraft maintenance to passenger booking engines. "We had several systems that were getting pretty long in the tooth—around for seven, eight, nine years," Dublikar says.

Unfortunately, you can't see a crew management system age the way you can see an airplane rust. But they do. "These systems are just like physical assets," says Mike Childress, former Delta CTO and

now vice president of applications and industry frameworks for EDS. "They become brittle with age, and you have to take great care in maintaining them."

In 1998, Dublikar and his IT steering committee brought in consultants from Sabre, the Southlake, Texas-based airline software and consulting company, to create a long-term IT strategy to address the issue of legacy systems and architecture. The consultants spent five months meeting with IT's various constituents in the business to find out what their needs were. They examined the airline's existing IT infrastructure and suggested a five-year strategic plan outlining (among other things) which systems needed to be retired, replaced or added, and a time line for doing so.

The crew scheduling system was marked for retirement. SBS was no longer "the only game in town," recalls Dublikar, and the case for replacing the system was pretty easy to make. "The

Living with Your Legacy System

LEGACY SYSTEMS can be like ticking time bombs. Even if a business case can be made to replace them, doing so takes time. If you have to live with a legacy system for a period of time before replacing it, you should take these steps to protect your business:

- 1 Conduct performance tests and capacity planning at least once a year.
- 2 Test critical applications thoroughly, especially buffer overflows that can lead to application failure.
- 3 Develop workable backup plans to deal with catastrophic legacy system failures.
- 4 If you find that the legacy system has so much value to the business that replacement is not an option, create a business case plan for legacy system modernization, whereby you reduce the risk associated with it.

—S.O.

Comair was one of the best managed and most airlines in the country.” —HOLLY HEGEMAN, AIRLINE INDUSTRY ANALYST

application was getting old. There was risk there, and there was new technology out there,” he adds. “There were even financial benefits to replacing the system in terms of crew productivity and expenses that could be controlled better in a new system.”

But this was 1998, and for the next two years, Y2K absorbed most of IT’s attention. By 1999, a significant amount of the work that had been laid out in the five-year plan (including Y2K remediation) had been completed or was under way—including implementing an e-ticketing system, upgrading the corporate network, replacing the maintenance and engineering system (another high-risk legacy system written in Cobol), and implementing a revenue management application.

The replacement of the crew scheduling system was among those next on the list. But after nearly 15 years in use, the business had grown accustomed to the SBS system, and much of Comair’s crew management business processes had grown directly out of it. Just look at a pilot’s contract at Comair; the definition of a workday is lifted straight out of the old SBS crew management application and expressed in Julian minutes the way the system did. (There are 44,640 Julian minutes in a 31-day month.) “That’s the reason why it’s almost impossible to replace these systems,” says John Parker, former airline CIO and 17-year Delta veteran, now CIO of A.G. Edwards & Sons.

But systems requirements had been defined, and the IT department was in the software selection process. Final vendor selection was slated for 2000, according to Dublikar.

But then, in the middle of 1999, Dublikar left Comair, and shortly afterward, Delta announced its plans to acquire Comair.

HANDS OFF AT DELTA

To Delta, buying Comair—one of its most profitable regional partners—was a no-brainer. It made money. It was an industry leader in on-time, cancellation and missed baggage statistics. And it was a stock market darling. “Before Delta came in, Comair was one of the best managed and most successful regionals in the country,” says Holly Hegeman, an airline industry analyst and founder of Plane-Business.com. “They had the reputation of being the top dog.”

By all accounts, Delta’s attitude toward Comair was, Why mess with success? Even IT looked OK to Delta. On paper, Comair had



project time lines, good budgets, everything you’d expect to see. “So there was no mandate at the Delta level to get the Comair IT ship righted,” Hegeman says. The only area Delta appeared to be concerned about was marketing; the parent airline replaced the entire marketing department at Comair within days of taking over.

Comair, like most acquired companies, wasn’t exactly welcoming to its new owner either. “There was definite friction,” Hegeman says. “Top management at Comair didn’t take kindly to being part of mother Delta.” So Comair continued to run independently for the most part—although as a wholly owned subsidiary, all major capital expenditures had to be approved by the parent company, Bardes and others say.

After Dublikar left, the IT director position stayed vacant for a number of months. In early 2000, Mike Stuart, senior vice president of flight operations, was given oversight of IT. And in March 2000, Sherri Kurlas-Schalk, who had been with the company since 1990, was named IT director. The tendency in the IT department, meanwhile, was to “keep your head down” and not draw too much attention to anything, according to Bardes, who left Comair last year to join software and IT services company Compuware as a senior systems designer. After the uncertainty in IT leadership and the takeover by Delta, there was a palpable lack of commitment to proj-

ects in IT. "Everyone was expecting someone else to move projects along," Bardes says. "The business units were expecting IT to push a project through. And IT was waiting for the business unit to push it through."

The five-year plan, which was supposed to be revisited on a regular basis, languished.

In 2001, an 89-day pilot's strike from March to June shut down Comair and the Cincinnati/Northern Kentucky International Airport, where Delta and Comair operate 90 percent of all flights. Comair closed its Cincinnati concourse, losing more than 800 daily flights and saddling Delta with a \$200 million loss for the quarter. Once the strike was over, Comair's flight operations group, the primary users of the crew scheduling system, had their hands full getting planes back in the air. "You can't just switch things on and get an airline running again," says Bardes. "There's a lot of inertia and momentum lost when you shut down, and it's hard to get started again." During this period, they gave little or no thought to replacing the crew scheduling system.

Then came 9/11, crippling airlines big and small, and pushing some of the largest carriers into bankruptcy. Though Delta has thus far avoided that fate, the airline lost nearly \$8.5 billion over the following four years, increasing the pressure to keep costs down. While there's no evidence that Delta refused to fund an upgrade for the crew scheduling system, "approval for capital expenditures seldom went through the first time [at Delta]," Bardes says. "They'd want more analysis. They had a definite influence on how fast money got spent."

Delta declined to comment for this story and referred questions to Comair. Comair spokesman Nick Miller would say only, "We've been very straightforward in acknowledging the challenging time we've been facing in the airline industry and that we've had to be very prudent in how we've invested in technology."

Late in 2002, the Comair IT group did turn its attention back to the crew management system and brought in several vendors, including Sabre and SBS, to perform demos. Comair went down the road a bit with one vendor, which it refuses to name, but ultimately backed out during contract negotiations due to pricing concerns. All in all, there seemed to be no hurry on either Comair or Delta's part to get the project rolling, even though the crew scheduling system was (and still is) the oldest application of its kind still running at a

Your Legacy System May Be Too Big a Risk to Tolerate When...

ALTHOUGH the legacy system that failed Comair was 18 years old, age by itself is not an indicator that a legacy system should be replaced, says Robert Charette, director of the Cutter Consortium's enterprise risk management and governance practice. There are other, more relevant facts—in addition to its maturity—that may make your legacy system intolerably risky, such as:

- 1 You no longer have anyone on staff who understands the language that it's written in.
- 2 You can't locate the source code or documentation, and the only person who understands the design retired years ago.
- 3 There is no one around who can fix the application on short notice.
- 4 Backup systems haven't been tested for years, or they're manual and too hard to implement even if you wanted to.
- 5 The original vendor went out of business.
- 6 You're not sure how many more transactions the application is handling than it did when you last upgraded it.
- 7 You discover there are other applications wired into the system that you weren't aware of.
- 8 Your company is still highly dependent on the system for everyday operations. —S.O.

regional carrier, according to a recent survey by *Regional Aviation News*.

Finally, Comair got approval from Delta to replace the legacy SBS system and inked a deal with Sabre in June 2004 to implement its AirCrews Operations Manager. Implementation was set to begin in 2005. But by then, it would be too late.

On Dec. 16, Comair reported an operating profit of \$25.7 million in the third quarter of 2004. A week later, a severe winter storm hit the Ohio Valley. The snow came with sleet and freezing rain. Deicing the jets took much longer than expected and some jets' tires froze to the ground. From Dec. 22 through the 24th, Comair had to cancel or delay 91 percent of its flights.

And another problem was looming. As it turned out, the crew management application, unbeknownst to anyone at Comair, could process only a set number of changes—32,000 per month—before shutting down. And that's exactly what happened. On Christmas Eve, all the rescheduling necessitated by the bad weather forced the system to crash. As a result, Comair had to cancel all 1,100 of its flights on Christmas Day, stranding tens of thousands of passengers heading home for the holidays. It had to cancel nearly 90 percent of its flights on Dec. 26, stranding more.

There was no backup system. It took a full day for the vendor to fix the software. But Comair was not able to operate a full schedule until Dec. 29.

THE BIG LESSON: MANAGE YOUR RISK

The Comair disaster is a classic case study in operational risk, according to industry experts, who say both Comair and Delta carry some blame. Comair IT executives

should have done the kind of risk management analysis that would have alerted Delta to the dangers of not replacing the legacy system sooner. And IT should have repeatedly brought that analysis to the attention of Delta officials until a replacement system was funded. Similarly, Delta executives should have insisted on scrutinizing Comair's operations and done their own analysis of the carrier's risks.

"Anything that can damage a parent company's brand or reputation has to be managed in some way," the former Delta IT executive says. "Risk assessment of worst-case scenarios at Comair should have happened at Delta."

What happened at Comair is hardly an isolated problem. Old green-screen legacy systems exist at the core of many businesses,

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and they can't take the velocity and number of transactions coming at them today from outside. "The more applications a legacy system is hardwired to over the years, the more fragile it becomes," says EDS's Charlie Feld, also a former Delta CIO.

The larger problem is that operational risks are not introduced into day-to-day decision making at many companies, such as Comair, the way things such as the mechanics of planes and daily operations are. Robert Charette, director of the Cutter Consortium's enterprise risk management and governance practice, says Comair executives still don't seem to have learned this basic risk management lesson. As late as March, Comair's Miller was blaming the debacle on bad weather. "If the weather had not hit as hard as it did, the problem would have never come up," he says.

Industry observers acknowledge that convincing first Comair corporate and then Delta executives of the necessity of replacing the

system would have been a tough sell for IT. But if Comair's IT had done a cost-benefit analysis of the risk of not replacing the system, they could have made a convincing business case for an upgrade, says a former Delta IT executive.

The technology is there, Feld says. "The question is how people in IT lay out that multiyear plan and get the right partners in there to help transform these legacy systems," he adds. "Because if you don't, there will be more meltdowns."

THE EPILOGUE

Having lost nearly as much as Comair made in profit the previous quarter with this fiasco, Delta finally intervened. On Jan. 17 of this year, 20-year Comair veteran and President Randy Rademacher stepped down, and Delta assigned Fred Buttrell, CEO of Delta Connection (which manages Delta's network of regional carriers) to

take over. Shortly after Rademacher's resignation, Stuart was also asked to leave. Some say more Delta blood may be infused into this regional subsidiary.

But whether Delta will invest more in Comair's IT remains to be seen. In its 2004 annual report, Delta said that it will post another substantial loss in 2005. A bankruptcy filing remains a possibility. And, says Childress, "when the airlines are in trouble, it's a lot harder to find cash for IT renewal and replacement." In fact, Delta has not ruled out the possibility of selling Comair or the other regional airline it owns to raise cash.

In the meantime, Bardes says he meets up with some of his old Comair coworkers for lunch every now and then. "I'll say, Are you still keeping your head down? They'll say, Oh yeah," Bardes says. "That place just seems to punish people who want to be agents of change."

As of March, Comair was still using the nearly 20-year-old crew management system from SBS, though with a lot more care. SBS implemented a bridge solution, dividing the legacy system into two modules—one for pilot schedule and another for flight attendant schedules—each with a 32,000 monthly limit of its own. Comair also began generating a daily report to monitor the volume of transactions going through the system.

And plans are still in the works to replace it. **CIO**

How to Make the Case for Legacy System Replacement

INVESTING in risk management or system replacement can be a tough sell to senior leadership at many companies. After all, replacing just one old system can carry a multimillion-dollar price tag.

To overcome this very common reluctance to invest in IT, CIOs must make the case that the legacy system is critical to the company's operations and that its failure could jeopardize the company's success. Veteran CIOs such as John Parker of A.G. Edwards & Sons advise performing a cost-benefit analysis that includes not only the costs of replacing legacy systems but also the cost of not mitigating the risk of a systems crash.

"That's where the business case is," Parker says. Comair's cost for not replacing its crew management system, for example, was the shutdown of the business for several days and a loss of \$20 million in operating costs and revenue. In addition, there can be many potential benefits to replacing legacy systems—such as lower operational and maintenance costs, better customer service, increased system integration and adaptability, or even increased revenue.

Kevin Murray made such a case for legacy system replacement when he was an IT executive at insurance company AIG in 2002. When making his business case, Murray presented the costs of a potential failure to the legacy system along with the high maintenance costs the company was paying to keep those systems running. He balanced that sum against the cost of replacing the system. "I knew our total cost of ownership would go way down and our speed to market would go way up," says Murray.

His business case hit home with AIG's executives. "Our CEO and our board of directors' jaws dropped. They saw what we had been spending and that we could get 30 percent savings by moving to a newer technology," says Murray. "It worked very well."

While CIOs should include risk analysis in any business case they make, they should also include the tangible benefits of replacement systems. "Flexibility and costs savings can be the straw that breaks the camel's back," says Murray, who's now putting together a similar case for legacy replacement as CIO of AXA.

CIOs who don't make the case will probably find themselves replacing their risky legacy systems at some point down the road anyway. "Once the worse-case scenario materializes and you haven't explored these kinds of options, you can get into desperation mode," Parker says. "Then you have to make decisions quickly to move off a platform, and most of them won't be well thought-out. It's a lot better to move strategically to replace legacy systems than to have to respond tactically to a system failure. —S.O.

CIO Leadership Agenda 2005

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Drawing on continuous research with hundreds of IT executives and other business leaders and experts, *CIO*'s editors have identified the five must-dos that make up the successful CIO's 2005 Leadership Agenda. CIOs who marshal their efforts behind these imperatives will get the most value from IT, help their enterprises compete more successfully and elevate the strategic importance of IT.

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Nothing Like Succeeds Like

Part of the CIO **Leadership Agenda** series

◀ **THREE CIOs, ALL IN A ROW**
UPS's first CIO, **Frank Erbrick** (left), paved the way for CIO **Ken Lacy** (middle), who opened the boardroom door for new CIO **Dave Barnes**.

UPS founder Jim Casey, who retired in 1962, is ever present in the black-and-white photos that hang on the company's boardroom walls. An even more lasting legacy, however, has been his insistence on promoting executives from within, a practice that is still zealously followed today. CEO Mike Eskew climbed the ranks over some 33 years, CIO Ken Lacy over 37 years. Now the next generation is taking its place at the shipping giant: On Christmas Eve 2004, Dave Barnes was ushered into the boardroom and given the CIO reins after 28 years at the company as a finance manager, technologist, executive and leader.

Barnes's coronation as just the third CIO in UPS's 98-year history was actually quite low-key, the way the unassuming Casey would have preferred it. Eskew did most of the talking, explaining to Barnes the dual requirements that came with his new job: on one level, as the CIO and head of IT; on the other, as a member of the company's management committee. "Of course, my heart was pounding," Barnes recalls. "Up to that point, it wasn't a lock that I got the job."

Barnes hadn't been the only candidate for the CIO spot. "I had two or three people in the pipe," says Lacy, who retired in February. But during the previous two years, Barnes distanced himself from the others. He had everything Eskew was looking for: leadership, innovation and execution skills. "You don't do the things that Dave has been able to do if you can't lead or you can't execute," Eskew says. "It's not like taking a chance on someone from the outside."

Of course, it's become commonplace for American companies to do precisely that when looking for an executive. UPS's policy of promoting from within seems as old-fashioned as lifetime employment and pension plans. Recruiting company Heidrick & Struggles says that nearly 60 percent of the Fortune 250 go outside to hire at the enterprise or divisional levels. The percentage is probably higher at companies in the next tiers

Reader ROI

- ⌘ How UPS's succession plan for executives works
- ⌘ Best practices for leadership development
- ⌘ Why a leadership development program must accompany succession planning

on
New UPS CIO Dave Barnes is the latest product of a culture that values succession planning

BY THOMAS WAILGUM

of revenue, which tend to have difficulty maintaining a deep bench of executive talent.

Yet succession planning is good for companies, because it creates a proven leadership model, preserves institutional memories, smooths business continuity and builds staff morale. And succession planning is good for CIOs and other executives, especially when accompanied by development programs that broaden leadership skills, because it helps them look beyond their current position. The risks of having no executive succession plan are increasing, according to Bill Rothwell, author of three books on succession planning. He points to a couple of reasons: an aging U.S. workforce that thins companies' executive talent as senior employees retire and, perhaps surprisingly, the threat of terrorism (172 corporate VPs lost their lives in the 9/11 attacks on New York, he says).

There are specific elements of a successful succession plan—including formal and informal procedures to groom the next generation, and CEO- and board-level support.

Here's how UPS does it.

A Culture and Program of In-House Development

The training and development process that propelled Eskew to the CEO suite started just one year into his employment at UPS, which was also his first job out of college. That's not unusual, he says. Long-term development is a longtime part of UPS's culture and is reinforced from Eskew on down. That, say succession planning experts, is one of the keys to success: boardroom backing of workforce development from top to bottom.

"You have to look at how the CEO and the board reward executives for talent development," says Rothwell, a professor of workforce education and development at Penn State University. He says many executives and board members fall back on a familiar excuse when it comes to succession planning: "In good times we're too busy, in bad times we can't afford it."

UPS, in fact, doesn't give its managers extra incentives for succession planning and employee development. It's an expected piece of every manager's job, "not just an HR

thing," says Lea Soupata, senior vice president of HR (who joined UPS in 1969). She credits UPS's culture of in-house development with keeping turnover of full-time management at less than 7 percent annually. "The ability we have to give people opportunities makes people want to stay," she says.

The first step in UPS's succession planning process is a formal talent identification program. Oftentimes, this begins with workers from warehouses, where many of the company's top executives started their careers. Talent identification has four phases: functional managers identifying good candidates for advancement; an assessment of a candidate's financial acumen, business process knowledge and leadership profile; an evaluation of how the candidate executes on the job, which receives more weight than anything else; and a management development committee review of what additional internal or external training a candidate needs. "It's not a one-size-fits-all process," Soupata says. "It's pretty much tailored to enhancing that person's job portfolio."



Ken Lacy (right) was willing to step down as CIO when **Dave Barnes** was ready to step up.

In the Right Place at the Right Time

Succession planning requires coordination and corralled egos

TIMING IS THE KEY to almost every facet of UPS's package-delivery business. Company executives stress that their succession planning program is successful only when the right candidate is available at the right time for the right position. For better or worse, UPS runs its employees hard and expects that most will retire in their mid-50s. Executives take that into account when selecting their successors. Former CIO Ken Lacy, who retired at age 55 in February, knew he couldn't tab someone his age as his successor. What's more, if Lacy waited to retire at 60, then his first-choice successor, Dave Barnes, who is 49, might have missed his own window of opportunity. "We spend all this effort and time on succession planning, and if you wait an extra five years, that person won't get that job," Lacy says. "Why would I not want to give Dave that opportunity?"

Of course, the corporate world is full of people whose egos won't allow thoughts of a successor. But Lacy says Barnes has the right skill set to handle UPS's increasing technology challenges. Because of Barnes's lengthy apprenticeship, which allowed him to run much of the IS organization before being named CIO, Lacy isn't too concerned. "He's got a new responsibility, not a new job," Lacy says.

-T.W.



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HR tracks the development of candidates within the talent identification program. Soupata chairs the management development committee, which (along with employees' individual managers) has the responsibility to make sure candidates are getting the individual training and development they need—such as attending executive education courses or public speaking classes.

Every year, each of the 12 members of UPS's management committee has to draw up a list of people within the talent identifi-

cation program who he thinks can fulfill the executive jobs within his jurisdiction. On a rotating basis at each month's management committee meeting, the members give an update about their pool of successors. For the CIO position, for instance, "we looked at who were the likely candidates who could be Ken's replacement many years ago," Eskew says. "By the time [the candidates] get to the management committee, we know these people and know what they can do."

At UPS, executives use the term "con-

structive dissatisfaction" to describe how employees are supposed to look for process improvements in everything they do. Barnes says constructive dissatisfaction is present throughout each employee's succession planning process, but it is utilized to stretch that person's abilities and connect his aspirations with management's long-term goals for him, not as a negative assessment of an employee's weaknesses. "If we only challenge people for their current job and we don't look down the road at what the next job is, we're probably going to fall short of getting the person ready," Barnes says.

Dave Barnes's Road to Success

In 1977, Barnes, a junior at the University of Missouri, took a job in St. Louis at a company he had never heard of as a part-time package loader. The hours were flexible and the pay was good: \$8 an hour. Now in 2005, one needs a playbook to keep track of his movements within UPS's various departments and U.S. and foreign offices. Barnes himself has trouble remembering all of his positions and the exact dates of each.

A part of UPS's culture is a constant shifting of employees' jobs, which expands the skills of high-potential candidates by thrusting them into different and difficult assignments. "We push them beyond their comfort zone and see how they react," says Eskew.

Not surprisingly, some candidates can't cut it. "I've had two or three situations where high-level managers were working in the IT organization for a long time, doing a great job in what they're doing, and I took them out for a year and gave them another assignment. And they failed," Lacy says. "With other people, they've eaten it up. You just never know."

Rothwell, who has done research on management rotations, says they can be an excellent method of identifying top employees, raising the visibility of possible successors and improving their skills, if managed correctly. A rotation program is not managed correctly when executives fail to tell employees why they are moving, what skills they need from the new assignment and what their performance expectations are.

Barnes did not fail. Each successful assign-

For the CIO position, "We looked at who were the likely candidates many years ago. By the time the candidates get to the management committee, we know these people and know what they can do."
—UPS CEO Mike Eskew

In addition, at a combined UPS board meeting and leadership conference held once a year, all executives review the top 200 candidates moving through the leadership identification program, with particular attention paid to the 50 people closest to actual succession. This offsite, says Soupata, is a great way for the board members to get to know the candidates. That's important, because the Heidrick & Struggles survey found that just 27 percent of board members at large companies felt they had an excellent level of assurance that companies have the right leaders in place.

Succession planning expert Rothwell calls this type of event a talent show and says they are fairly common at large companies. One important element of a talent show, he says, is the nature of the discussion among

Eskew, who makes the final decision on all executive successors, says he measured Barnes's ability to handle the stretch responsibilities of the CIO position along four dimensions: leadership, execution, innovation and UPS's culture. "Dave really ran at some point or another the customer relationship part

CIO Leadership Agenda 2005

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ment led to another with an increased responsibility—from corporate internal audit manager to the startup team of UPS Airlines to leading the international shipments processing system to the international financial systems controller role. Lacy first noticed Barnes as he was moving up the ladder on the finance and accounting side in the '90s. "But they had a deep bench in finance and accounting," Lacy recalls. So with the encouragement of Barnes's boss, Lacy asked Barnes to join his IS staff in 1998 to head up the UPS customer information

management function. "I talked to Dave and said there were no guarantees," Lacy says, "but he has the aptitude and abilities to do this job, and I'd like to bring him over here on my side." Barnes accepted on the spot.

That kind of simple, straightforward offer—telling candidates they have potential but that there are no guarantees—is a crucial piece of succession planning, says Jory Marino, managing partner at Heidrick & Struggles. A good manager tells an up-and-comer, "You're one of three people on the list. Don't screw anything up, and you

have a chance of getting there," says Marino. "The bad manager says to all of them, 'You're my guy.'"

Lacy made no assurances to any of his CIO candidates. "I don't think anyone perceived Dave as the successor," he says. But he didn't wait long to see how much Barnes could take, giving him several high-profile pieces of the IS portfolio. "What I was doing was giving Dave the pieces that I thought were the most complicated and the most interactive with the business so that along the way with delivering the projects, he also was delivering a reputation and a relationship with the business units," Lacy says.

Lacy can't point to one thing Barnes did during the next six years that cinched him for the CIO job. "It was an evolution," he says. But Lacy is quick to point out that Barnes was never given special treatment. In fact, it appears that Lacy invoked a "tough love" approach. "I never threw [Barnes] to the wolves," he says, "but I gave him all of the challenging stuff, just as Frank [Erbrick, Lacy's predecessor] did to me."

For example, Lacy charged Barnes with overhauling the UPS website in 2002. The site serves more than 200 countries and receives up to 15 million package-tracking requests daily. Barnes's challenge was to re-architect all of the customer applications running on the site (such as shipping and reference-number tracking), and repurpose the existing infrastructure and without disrupting any of the services. Barnes and his team completed the project, from concept to global rollout, in less than 24 months. "He took it from thought process and continued to grow it and be successful," Lacy says.

By the last half of 2004, Barnes was running 60 percent of the IS organization and was in on all of Lacy's major people and process decisions. But both knew that Lacy couldn't approve Barnes for the CIO spot. That would be up to Eskew and the management committee. "I'll get you ready," Lacy recalls telling Barnes. "But the people on this floor [where the executives sit], the ones you interact with, are the ones who are going to have to say yes."

One sticky point in succession planning is how early executives should let a likely successor know that he is the chosen one, and whether they make it public knowledge.

How to Succeed as a CEO

IT succession planning can be a springboard for CIOs who want to move up

UPS's succession plan helped propel Dave Barnes to the CIO spot, but succession planning programs shouldn't stop there. At Schneider National, the process resulted in the CIO becoming CEO.

Christopher Lofgren served as CIO of Schneider, a privately held trucking and logistics company, from 1996 to 2000, reporting to then-CEO and company founder Don Schneider. At that time, the company succession plan was a loosely organized effort run by the CEO and the board of directors, and was focused on the half-dozen members of the senior leadership team. "Because I was reporting to Don, the board was probably looking at me, but it was never said outright," Lofgren recalls. "But if you can't figure that out, you probably don't deserve to be considered for CEO."

To expand his skill set, Lofgren was given more responsibility over time, such as the financial oversight for logistics. He moved up to the newly created position of COO in 2000 and became CEO in 2002.

Soon after being named CEO, Lofgren set out to broaden the company's succession planning program.

He enlisted Tim Fliss, executive vice president for human resources, to increase the number of people included in the program, and to formalize the company's leadership and management training efforts. Fliss reviewed about 40 companies to benchmark Schneider's program against theirs; he also consulted with Stephen Drotter, author of *The Leadership Pipeline*. Fliss adapted some of Drotter's philosophy, such as setting up multiple levels of leadership development at Schneider. Today, about 65 employees are involved in the most detailed succession planning program; hundreds of employees are involved in a talent review program.

Schneider now has "a development approach that allows you to have possibilities for succession," Lofgren says. One such person is Steve Matheys, Lofgren's successor as CIO, who recently became executive vice president for sales and marketing. "It's an opportunity to broaden his experience," Lofgren says. "We have people ready to step up."

—Edward Prewitt



Christopher Lofgren, formerly Schneider National's CIO, now CEO

Fr: no good idea unsaid

To: no good idea unshared

Rothwell says companies usually don't tell successors early because they want to avoid the "crowned prince" syndrome. "Companies worry [the successor] will kick up his feet and relax," Rothwell says. Also, if a headhunter gets wind that a successor has been named, the competition "is going to go crazy trying to hire that person away, and they'll bid up his wages," he says. Executive recruiter Marino confirms that. "You're an A-player, and that makes you attractive to other companies," he says.

Yet if executives don't tell their successors, then they risk losing the star players. "The real question is, How do we tell them without making it sound like a verbal contract regard-

couldn't fit the company culture—as Exhibit A, see Hewlett-Packard and Carly Fiorina. Tales from succession planning failures are harder to come by, but there are mistakes to avoid. The cloning syndrome is one of the most obvious. "It's a well-known bias that we tend to pick people who are like ourselves," says Rothwell. "The clone of the incumbent may be a mistake because the company needs to move in a new direction."

Barnes and Lacy, in fact, do overlap in their management skills and adherence to UPS business principles—by about 50 percent, in their mutual estimation. But that's where the comparisons end. "He's not a

because such studies are time-consuming and expensive, they are often rushed and done incorrectly, he says.

For his part, Eskew doesn't seem concerned that Barnes won't be able to handle the CIO job. "In Dave's case, the technology piece—he's done all that. The leadership—he's done all that. It is the management committee that is new to him," Eskew says. "But you take your bets and put Dave in place."

There are cases when companies should actively venture outside for new executives, says Heidrick & Struggles' Marino. "When companies are changing their business model in a dramatic way, they may want to look to other industries," he says. For example, companies that are concerned about supply chain issues, product flow or distribution—but don't have that expertise in-house—should look outside for new hires.

UPS doesn't often feel the need to recruit elsewhere at the executive level because of its ingrained succession processes and demanding culture. "Occasionally we ask ourselves, Is there reason to go outside?" Eskew says. Soupata says that UPS has recently made more midlevel hires from outside the company, especially in IT. "We have more disciplines now, and we need more expertise," she says. But at the boardroom level, not much has changed, nor probably will. Of the top 12 executives at UPS, 11 of them have been wearing brown their entire careers, and the one who did come from outside (CFO D. Scott Davis) joined when UPS acquired his company in 1986.

A final key to UPS's succession planning success is the impression that UPS executives like to have of themselves as typical, everyday workers. "This is not a company of superstars," Eskew says. Succession planning, say UPSers, is a key element of being able to discover who the next non-superstar leader is going to be. As Barnes settles into his new office on the fourth floor, he doesn't have much time to sit back and appreciate his new digs. Just a month after his appointment, it was already time to start thinking about his own succession plan. "It never stops," he says. **CIO**

Staff Writer Thomas Wailgum (twailgum@cio.com) covers wireless, collaboration and remote computing technologies.

"You know you are at a company where they are grooming a certain number of people for a job. But there's never a person for a job."

—Dave Barnes, new UPS CIO

less of business conditions?" Rothwell says. He advises that companies do a preemptive strike against talent loss by giving those people plenty of reasons to stay—without promising them a promotion.

Barnes says he didn't know for certain who the other CIO candidates were or that he got the job until the Christmas Eve meeting with Eskew. "You know you are at a company where they are grooming a certain number of people for a job," Barnes says. "But there's never a person for a job."

Lacy says he gave the other candidates opportunities too. "The understanding is that you always have more than one person; you never put all your eggs in one basket," he says. Whether to tell or not to tell did concern him. "You struggle on both sides of the equation because if something caused you to feel that you made a mistake [with a successor], and you've already made it public knowledge, do you go through with it? Or do you say, I made a mistake, and back up?" Lacy asks.

When Succession Planning Doesn't Work

There are plenty of cautionary tales of companies that hired an outsider executive who

clone of me," Lacy says. Their personality differences are easy to spot. Lacy was a finance person first and a technologist second, and a "law and order" manager uncomfortable with public speaking. He was known for getting the job done. Barnes is more comfortable in the technology area (though he does have some finance chops). Lacy calls Barnes more of a visionary and a bit more polished. For example, he doesn't mind talking to the media.

But as Soupata points out, UPS avoids cloning primarily because it puts the most stake in what Eskew and the management committee have to say about a candidate whom they have watched for many years. "The person who is retiring should almost have the least amount of input because he's not going to be here," she says. Adds Lacy: "The crown comes because everyone wants him to have it. Not just because I picked him."

Another famous mistake in succession planning, says Rothwell, is to assume that a good track record at one level will guarantee a good outcome at the next level. Rothwell advises that companies study the competencies and personality characteristics required of job roles at each level. But



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MANAGING MULTIPLE OUTSOURCING VENDORS
is costly and complex, and in order to control contracts and
providers, smart CIOs are using vendor dashboards and
training their staff in finance

BY SUSANNAH PATTON

A man in a dark suit, white shirt, and striped tie stands on a tennis court. He is holding a tennis racket in his right hand, and several yellow tennis balls are resting on the racket's head. The court floor is dark, and many yellow tennis balls are scattered around him. The background is a light-colored wall with vertical lines.

"There's no question you need more management bandwidth to handle multiple providers," says **Larry Bonfante**, CIO of the US Tennis Association.

Reader ROI

How multiple outsourcing vendors can save money and bring in specialized services

Ways that CIOs can mitigate the risks of overseeing multiple vendors

Why it's key to train IT staff in vendor management skills

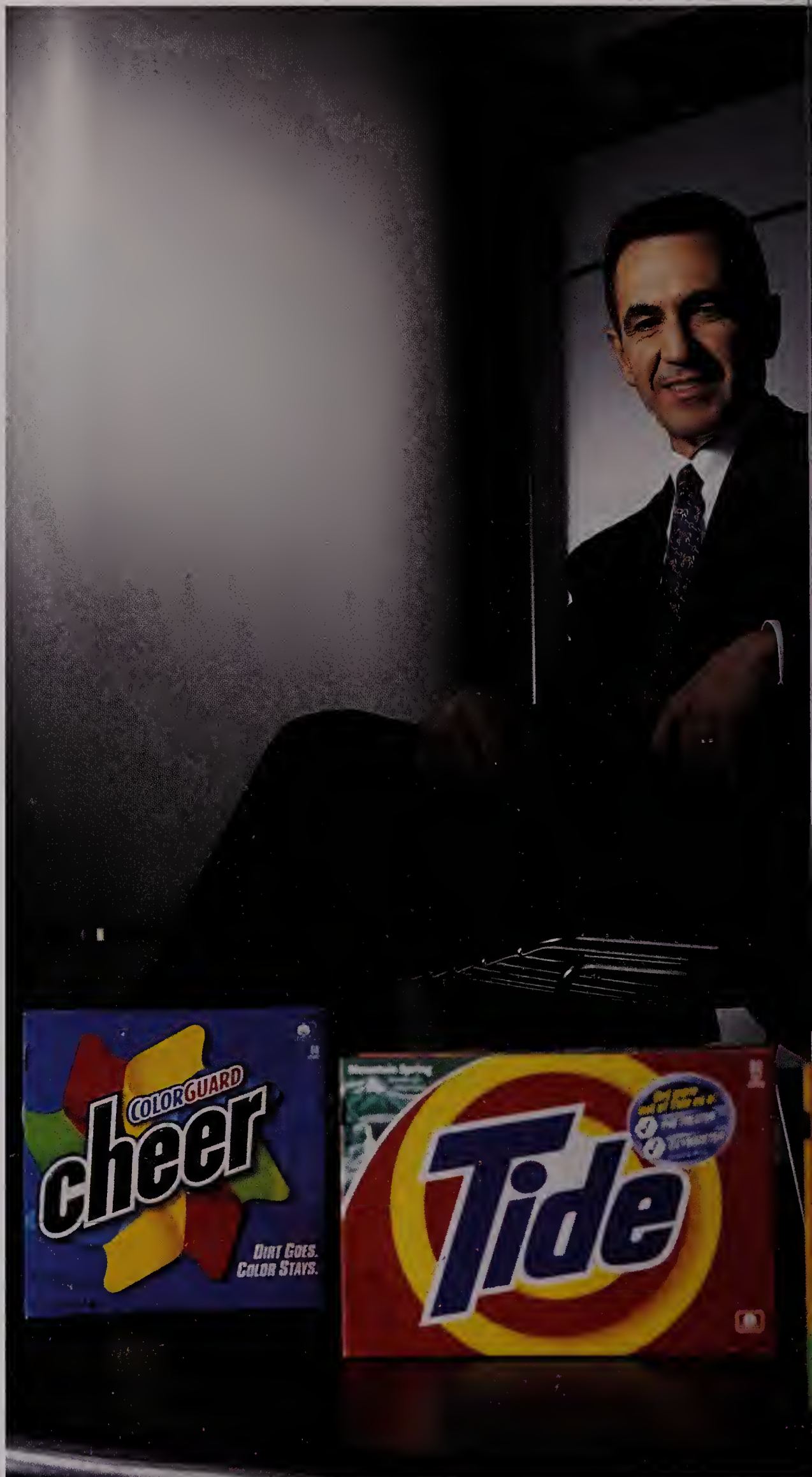
Vendor Management

FOR FILIPPO PASSERINI, Procter & Gamble's CIO and global services officer, managing outsourcing deals is a tall order. Literally. In December 2002, Passerini received proposals from three IT companies to take over much of P&G's IT services. Binders filled with documents from IBM, EDS and Hewlett-Packard weighed a total of 147 pounds and stood 6 feet tall when piled on his office floor. Within five months, Passerini would sign a contract with HP that was so voluminous (10,000 pages) he had to sign it standing up. The \$3 billion, 10-year deal with HP, it turns out, was just the beginning. Over the next four months, Passerini would sign three more large outsourcing deals, covering HR systems, payroll, facilities management and CRM—all with different vendors.

The rows of proposals that still line the shelves of Passerini's Cincinnati office reflect the complexity of what Procter & Gamble took on when it made a major shift toward outsourcing with multiple vendors. When P&G started planning to outsource IT and shared services functions, top executives considered a "big bang" approach with one provider. But a year into the project they decided to award the jobs to a select group of vendors in order to take advantage of technical specialization. "We were looking for the best suppliers in different areas, so we decided that the big bang outsourcing deal wasn't for us," says Passerini.

By choosing to work with multiple outsourcers, CIOs can cut costs and foster competition between vendors, while taking advantage of vendor specialization and technical expertise. They can also reduce the risk associated with depending on a single vendor. But as Passerini will attest, managing a stable of outsourcing partners can also be time-consuming, complex and expensive. "I would call it extremely demanding," he says. In P&G's case, Passerini has spent the past two years shaping a new governance structure to oversee the outsourcing vendors, an area in which the company had little previous experience.

Others with similar experiences would no doubt agree that managing multiple outsourcing vendors can be a strain. Through 2007, according to research group Gartner, multisourcing will remain the dominant sourcing model, but fewer than 30 percent of enterprises will have formal sourcing strategies and appropriate governance in place. In a 2004 survey of 130 CIOs,



42 percent said they were dissatisfied with their outsourcing relationships, according to outsourcing advisory company EquaTerra. And the primary reason cited, according to EquaTerra, was a poorly developed, underbudgeted, underresourced governance model.

To make sure they are getting the most from their multiple outsourcers, CIOs need to dedicate staff to oversee each vendor relationship and establish regular reviews of vendor performance with measurement applications such as dashboards or vendor scorecards. In contract negotiations, CIOs need to spell out that vendors should cooperate and refrain from blaming, or else risk losing the job. They need to find qualified staff with financial as

ERP, HR and desktop support (among other areas), they can get better overall service. "It's becoming a lot more rare to see one vendor take the outsourcing deal," says Gartner analyst Christopher Ambrose. A survey of CIOs taken in February on CIO.com showed that 42 percent use three or more outsourcing vendors, while 36 percent use fewer than three, and 22 percent are sticking with one.

Leading the pack of organizations that split up outsourcing among multiple vendors is GM, where Group Vice President and CIO Ralph Szygenda promotes the use of numerous, competing outsourcers. GM's so-called third wave of outsourcing comes after the automaker began to sever ties with EDS, a for-

"MANAGING THE OUTSOURCING RELATIONSHIPS requires a whole new set of skills. You have to plan carefully, train your staff and set up a new management structure. None of this can be done overnight."

—FILIPPO PASSERINI, PROCTER & GAMBLE'S CIO AND GLOBAL SERVICES OFFICER

well as technical skills to help run a project management office or some other body that can track all outsourcing agreements.

"Managing the outsourcing relationships requires a whole new set of skills," says Passerini. "You have to plan carefully, train your staff and set up a new management structure. None of this can be done overnight."

Going Multiple

In October 1989, Kodak outsourced the bulk of its data center operations to IBM in a 10-year, \$250 million deal. It was a momentous occasion for Kodak and the dozens of other large companies that would soon follow the film giant's lead. Kodak's deal set the stage for massive outsourcing negotiations with vendors such as IBM and EDS and helped to change the way corporate America thought about IT. Suddenly, CIOs were talking about core competencies, cost savings and strategic partnerships with their IT vendors. Since then, as outsourcing has taken off, so has the complexity of managing the contracts. As opposed to the early days when several large providers ruled the territory, CIOs can now survey a varied landscape of small and large outsourcers. And by carefully choosing providers that specialize in

mer subsidiary, in 1996. Although EDS is still one of GM's major IT suppliers, Szygenda and his team have sought to distribute deals among competitors. Right now, GM has "dozens" of outsourcing vendors, including "most blue-ribbon providers," says Maryann Goebel, CIO for GM North America. Goebel praises the arrangement and stresses that the company's outsourcing approach has helped it cut its IT costs by \$1 billion per year over the past six years. But she also says that the multisourcing strategy presents some major challenges and time commitments for IT organizations—and that she talks with one vendor or another "on a daily basis." GM's version of multisourcing goes far beyond P&G's more measured approach, which currently aims to keep the number of strategic suppliers between two and five. "More than that would bring too much complexity," says Passerini.

The time commitment can mean higher costs, at least initially, although the actual cost of managing multiple outsourcing vendors is difficult to quantify. Gartner's Ambrose says managing any outsourcing arrangement adds 3 percent to 11 percent to the total cost of the deal. So if you have a \$100 million deal with a single provider, it will cost from \$3 million to

PHOTO BY JOE HARRISON

Vendor Management

\$11 million to manage it. To oversee P&G's vendors, for example, the company has designated 100 people to form a governance organization under Passerini. Those employees focus exclusively on managing the outsourcing relationships. Although the company hasn't broken down the added expense of this governance team, such a large structure would add considerable cost. "There's no question you need more management bandwidth to handle multiple providers," says Larry Bonfante, CIO of the US Tennis Association.

The Need for Specialization

From the large multinationals such as P&G and GM to midsize and smaller companies, many CIOs are finding they have to break up their outsourcing deals in order to find the services they need. The US Tennis Association, which has annual revenue of \$200 million and an IT staff of eight, outsources almost all projects and operational services. Affiliated Computer Services (ACS), Bonfante's primary vendor, takes care of infrastructure services and application support, while a specialty business, TMA Resources, handles his membership management. He also works with Quero for data mart services and is investigating possible partnerships with application development groups. For Bonfante, the former head of global IT planning for Pfizer, the need to find specialized services, such as for membership management, requires him to slice up his outsourcing pie. "I have yet to find one vendor who can do everything at a good-to-great level," Bonfante says.

However, he says that because of his organization's small size, the larger outsourcing providers—such as HP and EDS—aren't interested in hearing from him. "You can find people, but it really limits who you can bring to the dance," says Bonfante.

Dave Copas, senior vice president of logistics and information systems at privately held chocolate maker Russell Stover, agrees that CIOs at companies in the middle tier (with revenue between \$100 million to \$1 billion) need to gauge how significant they are to an outsourcing partner. "If I were at a \$40 billion company, I might go to an IBM and have them do the entire infrastructure," he says. In his current situation at a midsize company, however, he thinks he gets better



To Go Multiple or Not?

For some companies, staying with a single outsourcing vendor is still the way to go

When Tom Conophy, executive vice president and CTO at Starwood Hotels & Resorts Worldwide, started thinking about replacing the company's legacy systems and outsourcing vendor in 2003, he considered breaking up the long standing deal it had with IBM. In September 2004, however, Starwood signed a seven-year, \$100 million outsourcing deal with HP to build a new reservation system and run the bulk of its IT services.

"In the end, we felt we could avoid the extra legal negotiations, contract definitions and handoffs we would have had to deal with had we gone with four or five different providers," says Conophy. "We wanted to avoid the complexity and the finger-pointing."

While a growing number of companies choose to work with three to five outsourcing vendors (some juggling many more), companies that feel they are in the driver's seat with their vendor may not need more. "Companies should stay with what they know, who they trust and what they perceive to be a good deal," says Dane Anderson, program director of Meta Group's Technology Research Services. "There is no one right number of outsourcing partners."

Conophy says that the decision to award the major contract to one vendor hinged in part on HP's agreement to undergo third-party benchmarking "to a greater degree" than IBM, and to allow Starwood to retain intellectual property for the codeveloped system. Starwood also manages smaller outsourcing contracts with Unisys for broadband services on its properties and several other smaller providers for telephony, but it now considers HP its major outsourcing partner.

Some large outsourcers are so eager to get the big deals right now that they are willing to make concessions—such as agreeing to regular third-party benchmarking—in order to get new business. "Vendors are very hungry and willing to bend over backward to procure the clients," says Howard Spilko, partner and cohead of the outsourcing and technology transactions group at the law firm Kramer, Levin Naftalis & Frankel. In Starwood's case, the company has been rewarded for choosing one vendor with the ability to closely monitor the vendor's progress and benchmark its service-level agreements against other outsourcers during the life of the contract.

"We're in it for the long haul," says Conophy. "But the regular report card will allow us to validate that the relationship is where it should be." —S.P.

service from a group of smaller, more specialized vendors.

Governance Is Key

To ensure better service, however, companies need to dedicate time and staff to oversee vendors' performances. And to avoid losing control of service levels or the scope of an outsourced project, they'll have to make sure they have qualified people in place to manage the contracts and create a governance structure. "Companies that don't put professionals in there to handle the relationships will get outmanaged and outexecuted by the

providers," says Mark Hodges, chairman and cofounder of EquaTerra. Since P&G's Passerini signed outsourcing deals, he has successfully built a 100-person governance structure dedicated entirely to the major outsourcing deals—including (in addition to HP) a \$400 million, 10-year deal with IBM for HR services; a five-year agreement with Jones Lang LaSalle to handle P&G's facilities management; and a five-year deal with Sykes Enterprises to outsource customer care, CRM applications and global fulfillment services. The governance team conducts monthly reviews with each vendor to make sure all

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Vendor Management

service-level agreements (SLAs) are being followed. Passerini acknowledges that the operation has been difficult to manage because P&G has had to develop new skills that range from service-level agreement monitoring to how to draw up vendor scorecards within the organization. "This governance area is completely new to us," he says. Passerini trained his own staff by bringing in P&G purchasing teams to teach them best practices for dealing with suppliers and also made sure that he had experts in subject matters from IT to CRM and facilities management. One of the more difficult aspects has been turning the mind-set of P&G staff from doing everything to overseeing vendors. "Our company has traditionally been a culture of doers," he says.

P&G's outsourcing governance team uses software to track hundreds of service levels and to enter the data into a "scorecard" that allows them to visualize vendor performance. "This is nothing revolutionary," he says. "It's getting a feel for it that is key."

Ideally, companies should manage their outsourcing contracts as a portfolio in order to get a better value, according to outsourcing experts. Mark Hodges notes that several large multinationals that juggle from eight to 12 outsourcing contracts manage their vendors by separate business functions,

Hodges notes, however, that there are very few examples of such portfolio management of outsourcing contracts, with the possible exceptions of GM and Procter & Gamble. At P&G, members of the governance team are assigned to work on one of the outsourcing contracts, but they interact and keep tabs on how their colleagues manage the other vendors. Goebel says that in order to assure

smooth operation of GM's multiple outsourcing contracts, she and her colleagues ask each vendor to meet with them on a monthly basis to identify projects that need special attention—a major production outage, for example, or some other problem. "We bring everyone to the table to talk about what is going wrong, and how we can fix it as a team," Goebel says. Then, Goebel and her

"You have to manage your relationships so that you don't have finger-pointing. If they can't play that way, they're not a good partner."

**—DAVE COPAS, SENIOR VP OF LOGISTICS
AND INFORMATION SYSTEMS, RUSSELL STOVER**

rather than with one central group. The result, he says, is that these companies buy more services than they actually need. "If you manage these deals collectively, as a portfolio, you will spend 15 percent to 20 percent less than if you let outsourcing deals go unsupervised or uncoordinated," Hodges says. The best way to do this, says Hodges, is to create a project management office that will oversee all of the relationships. An alternative would be to have a "center of excellence"—or a group that sets standards on procurement—so that the actual outsourcing relationships are handled by the lines of business.

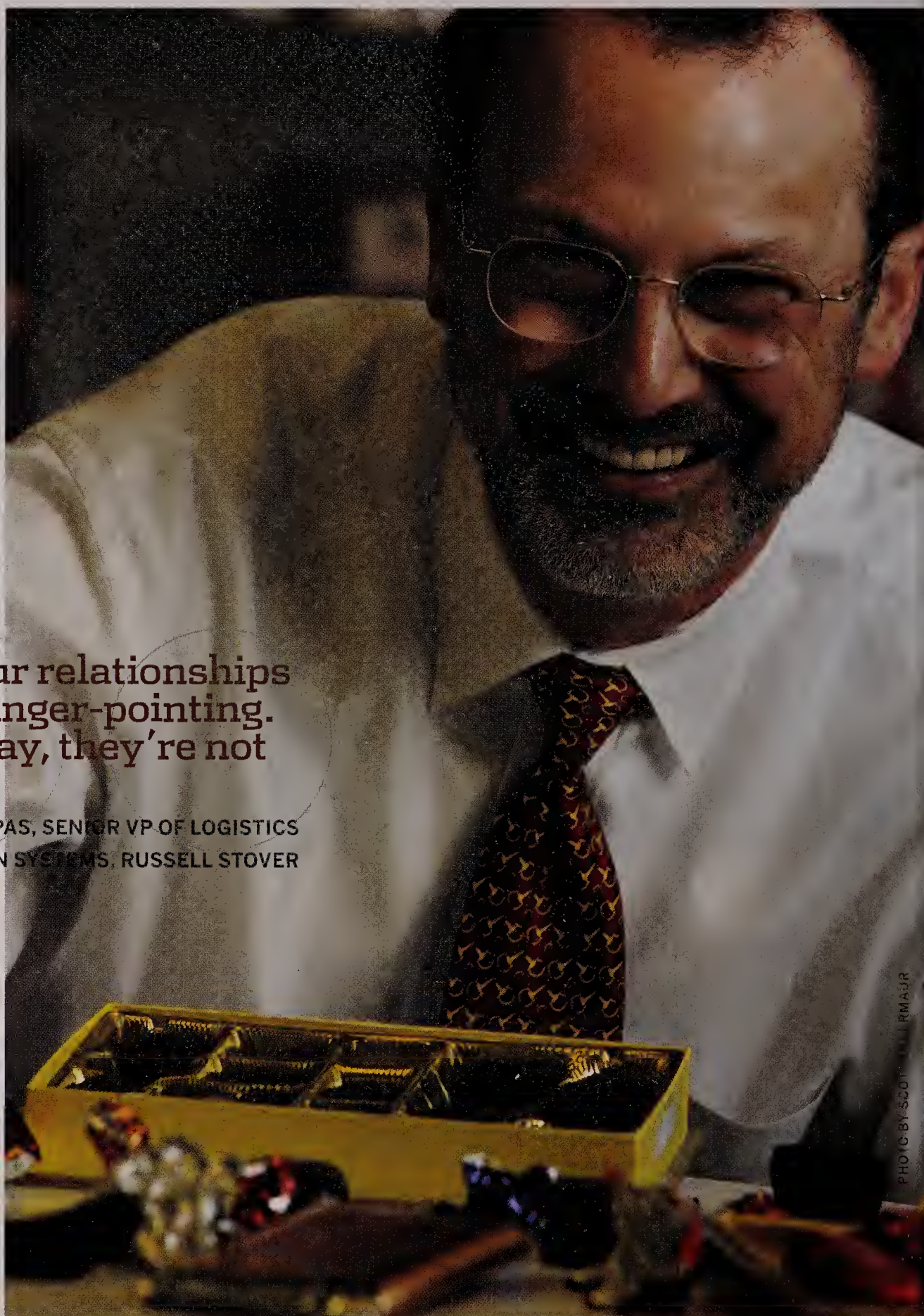


PHOTO BY SCOTT KILMER

colleagues put together annual vendor report cards that detail each key vendor's performance in the service it provides and its level of innovation. The results are improving service levels across the board, Passerini and Goebel say.

Joe Eckroth, CIO at toy maker Mattel, says that although he doesn't have a designated office for managing his multiple IT outsourcers, he appoints a senior IT person to work directly with each vendor. "If you don't manage and nurture that relationship like it is your own development team, you could get totally out of sync and watch the level of your services drop considerably," says Eckroth, who works with five to 12 outsourcing vendors at any one time. For example, he recognizes achievements from his vendors. "You can't treat the vendors working with you as stepchildren," he says.

The more complex management structures at GM and P&G help those companies to focus their attention on vendor relationships. At GM, Goebel describes an "unusually thin layer" of IT staff who focuses almost exclusively on vendor management because so much of IT is outsourced. This "thin layer" comes to about 2,000 people around the world, and most focus on managing outsourcing vendor relationships, she says. At P&G, the existence of a massive shared services department makes it simpler to place all outsourcing relationships under one group.

Keeping Track of Vendors

With multiple outsourcers, sometimes the sheer number of relationships to be managed means you'll also need to automate. Such was the case in April 2000 when Cheryl Rowden took over as director of IT finance at Verizon Wireless. The wireless provider doesn't outsource IT infrastructure but regularly brings in consultants from a stable of 150 vendors to work on IT projects. "It was clear that I could never add enough headcount to track all of these relationships," Rowden says.

Verizon Wireless wanted to competitively bid on consulting services from a wide variety of vendors, so it set up a structured system to compare vendors and then handle payments. The following year, Rowden selected InSite, a Web-based services procurement application from Chicago-based Fieldglass. With her staff

trained in the application, they currently track 110 active vendors that consult with Verizon Wireless. During the first year, the competitive bidding process saved Verizon Wireless 17 percent of its approximate \$100 million total IT spending on consulting services. The savings came as a result of putting everything out to bid, thereby getting services at a lower cost. Using the application has also allowed her to compare vendor performance and reward those who do well. And vendors have not been complaining, she says, because the streamlined systems, which also keep track of what the company owes to vendors, mean they get paid in "record time."

Lawyers, working on outsourcing deals advise clients to use a software application to track vendor relationships and performance, and to help create regular reports and dashboards. "The relationship management people and IT people in charge of outsourcing deals need to live and breathe this kind of stuff," says Kevin Colangelo, a senior associate at Kramer Levin Naftalis & Frankel who works on large outsourcing deals.

Play Well Together

Collecting and storing hard facts on vendor performance provides ammunition when you need to get tough. Copas of Russell Stover says that after years of experience working with multiple vendors, he has learned that it pays to be forceful at times—especially when those vendors aren't cooperating with one another. Six months ago, for example, he was rolling out point-of-sale systems in his stores, which involved his ERP outsourcer OneNeck IT Services, NT specialists at another smaller outsourcer called IT21 and several other groups working on installing broadband. One of those groups, a third-party aggregator, was supposed to provide an IP feed but ended up squabbling with some of the other vendors. "I wrote them a letter and canceled their contract," Copas says. "At the end of the day, ideally, we're not sure who's working for who. We just have to get the job done."

Copas has learned over the years to monitor outsourcing vendors from the start. He makes sure that he has a clear set of performance indicators in his contract, such as uptime percentages for major systems and data centers, so that he can go back on a reg-

ular basis to track performance. "If there are violations, the SLA bells start ringing and money changes hands," he says. When he took over the IT department at Russell Stover in June 1999, he determined that the current outsourcer was doing a poor job and considered bringing the Baan ERP system back in-house. But fearing he would have trouble finding the talent, he decided to outsource the ERP system to OneNeck. Soon after, he outsourced payroll to ADP, the company's EDI manufacturing system to Sterling Commerce and desktop support to IT21. Recently, he outsourced the website to MarketLive. For the most part, those vendors work well together, he says.

David Karabinos, EquaTerra's chief operating officer, says that companies should draft contract agreements that enforce cooperation. One example is the "operating level agreement," which can require that providers work together for the company's benefit.

Joe Hogan, vice president of worldwide marketing, strategy and alliances for HP Managed Services, says all parties—including the client and other outsourcing providers—usually sit down and spell out the need for cooperation at the start of any deal. "Sometimes it's a handshake; other times it means signing an integrated service-level agreement," Hogan says.

Copas would agree.

"You have to manage your relationships so that you don't have finger-pointing," he says. Simply put, he advises CIOs to make it clear at the start of contract negotiations that the vendors risk losing the job if finger-pointing starts. "You have to say, 'Look, we're the customer, and you're here to solve the problem.' If they can't play that way, they're not a good partner for us." **CIO**

Send your outsourcing management ideas to Susanah Patton at spatton@cio.com.

Balls in the Air or Controlled Chaos

Outsourcing adviser EquaTerra recommends CIOs establish regular reviews of vendor performance with measurement applications. To view a **SAMPLE VENDOR SCORECARD**, showing how companies can track performance and compare services, go to the online version of this article or to www.cio.com/050105.

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John Hummel, CIO at Sutter Health, believes the best way to advance his IT agenda is to understand his stakeholders, customize his messages and maintain a sense of humor.

The Magic of Positive Politics

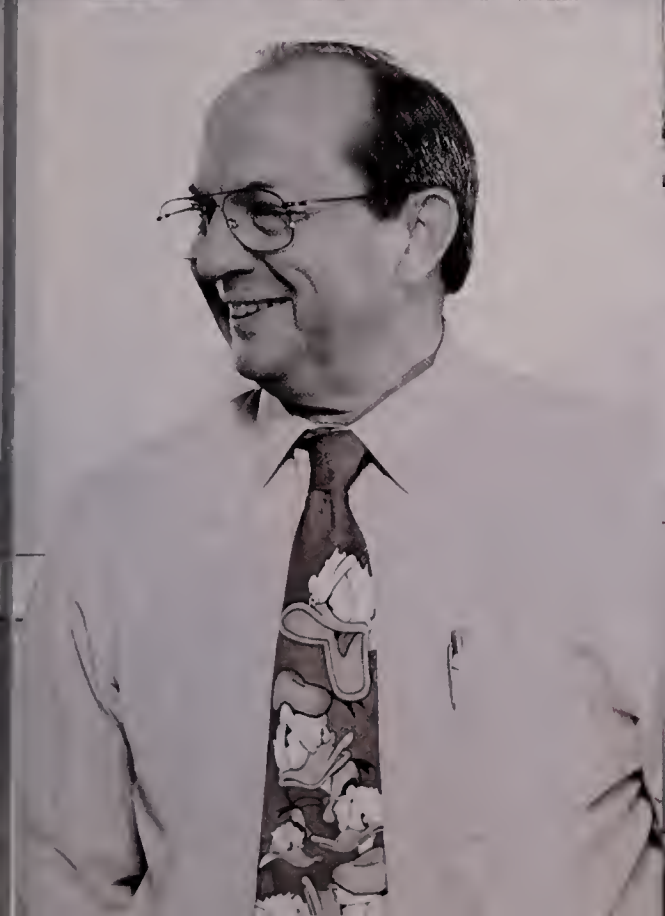
Being a CIO in the health-care industry can be a trial. For Sutter Health's John Hummel, practicing the art of political theater helps soften the tribulations.

BY MERIDITH LEVINSON

For John Hummel, managing the way all 41,000 employees across the Sutter Health network perceive his IT department is one of the most important aspects of his job. Hummel, senior vice president and CIO at Sutter, a 28-hospital health-care system in Northern California, believes he can't accomplish anything without paying careful heed to the way his IT department is seen, heard and understood. And there's quite a lot that Hummel hopes to accomplish—including an electronic medical records system, an electronic medical orders system for administering prescriptions (known

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Leadership

as computerized physician order entry, or CPOE), a virtual ICU initiative, an ERP implementation and a network upgrade.

To make sure that the administrative, clinical and executive staff think about IT in the way Hummel wants them to, he engages in what he calls political theater. And it's a leadership skill he's mastered. On a Monday morning in February, for example, Hummel sits in a regularly scheduled meeting with his executive IT staff to ensure that they're all delivering a consistent message about the status of several key projects, including the ERP implementation and the electronic medical records system. Later that day, Hummel and two members of his staff will be going into a meeting of the Executive Information Technology Committee (EITC), Sutter's IT governance body, and he wants everyone to be prepared. One thing that he wants to happen

planned and well-done that people get this overwhelming sense of confidence in you and don't mind being led down the primrose path," says Hummel. And because CIOs have a limited amount of time with an audience—whether that audience is the board, the executive team or the CEO—they have to spend time up-front to research and rehearse their message so that when they do get that minute in the elevator with the CEO, their delivery is flawless and convincing, says Hummel.

At Sutter, Hummel's practiced and deliberate communications and attentive handholding are particularly instrumental in helping him overcome doctors' traditional resistance to technology. He has used his powers of persuasion to push through expensive and high-risk initiatives—such as a \$150 million picture archival computer system (PACS) that will help doctors to more

"The stuff John was doing a few years ago is now seen as just *de rigueur*," says Scott Wallace, president and CEO of the National Alliance for Health Information Technology, a professional organization and lobbying group in which Hummel participates. "The things he's done have really been impressive." Because of his reputation, Hummel is rapidly becoming a big name in health care. "He is as sophisticated and savvy as any Fortune 500 CIO," Wallace adds. Perhaps even more so.

The Director of Communications

"I have to make sure people understand why we're doing what we're doing in IT," says Hummel. If we're not all reading from the Book of John, IT can't give out a consistent message about what we're doing."

Consistency is of tantamount importance at an organization as large and geographi-



JOHN HUMMEL KNOWS that if he's not visible to employees throughout the organization, they won't know what he's doing or recognize IT's value.

in the meeting is to get the EITC (which consists of the CEO, COO, chief medical officers and executive vice presidents) to agree on the group of individuals who will make decisions about the electronic medical records project. So Hummel rehearses his staff as if he were directing a play, cuing them on when and how to ask various questions.

"When we get to the agenda item on the charter, governance and budget for EHR [electronic health records], say, 'We would like to have EITC approve the EHR committee structure. We are here to gain approval for the current structure,'" he instructs his staff.

Such staged communications are necessary at Sutter and, indeed, at every organization—especially for CIOs. That's because IT is so complicated, involves so much change and creates such anxiety in employees. Therefore, CIOs have to carefully craft their message. "The idea is to make everything seem so well-

quickly and accurately diagnose patients' conditions (the project also includes a \$30 million ERP installation); a \$25 million remote virtual physician system for intensive care units (known as eICU) that has decreased the mortality rates among those monitored by the system by up to 30 percent; a \$30 million bar-coding system that has prevented approximately 28,000 medication errors across more than 4.6 million attempted drug administrations in 12 hospitals from the time it was implemented in May 2003 through December 2004; a \$154 million investment in an electronic health record system that will also enable computerized physician order entry (CPOE), which gives patients and medical professionals secure access to digital medical records housed in one system across both inpatient and ambulatory settings.

In total, Sutter will spend \$1.5 billion on IT over 10 years.

cally diverse as Sutter, where it can take Hummel as long as nine months to assign the proper business or clinical owner to an IT project and then sell all key stakeholders on the value of that project. (Hummel, who has been with Sutter since 1998, says it's a tremendously consensus-driven organization.) Consistency is also instrumental in reminding Sutter's top executives why they approved technology investments. "In the IT world, because these projects take months and months and months and years to roll out, you have to remind people of the reasons they invested in them in the first place," Hummel says. If you don't, says Hummel, the top brass may decide to pull the plug on a project if it's costing too much money, or worse, yank the welcome mat from under your feet. Effective politicians do the same thing: They constantly reinforce messages, persistently repeat hopes and

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Leadership

steadfastly reiterate dreams.

Hummel uses the tactic of repetition when discussing a Lawson software ERP implementation that's been going on for seven years. The reason it's taking so long: Sutter spent the first few years building the system, and the organization's resources limit rollouts to 12 business units each year. (Sutter currently has rolled out the system to 65 business units, with another 25 to go.) At the February EITC meeting, the ERP implementation is the agenda item that Hummel is most concerned about because several user groups need to be retrained before Sutter can fully realize the cost savings from the

sis on ROI. He showed the CFO how much medical errors cost, how often they take place, as well as the costs Sutter incurs when it has to credit patients' bills for medication when it is not administered.

"He understands the audience he is presenting to and how to operate in that context," says Todd Peterson, Sutter's vice president and CIO of systems support operations, one of Hummel's top lieutenants.

In addition, Hummel uses his background in clinical care to relate to doctors. He spent part of his career in the mid-1970s working as a biomedical engineer for lithotripsy and laparoscopic devices, teach-

to understand how real those problems are," he says.

Making the Rounds

Hummel puts 35,000 miles on his Ford Escape each year driving to and from Sutter's various hospitals and facilities in Northern California. During his travels, he attends board meetings, pitches doctors, nurses and pharmacists on IT initiatives, and checks in with local IT staff. The informal check-ins keep him in touch with employees' perceptions about Sutter's business and technology initiatives, and help to inform his own opinions when he addresses

Tending to Morale

To foster confidence and good feelings among his employees, CIO John Hummel rewards employees with opportunities and recognition.

As CIO of Sutter Health, John Hummel is confident in his own abilities. He's also confident in the abilities of his 945-member IT group. It's confidence that he fosters. Hummel is a bona fide proponent of career development. Debra Sleight, vice president and CIO of IT strategic planning and integration, is an example of Hummel's commitment to developing his staff. When she interviewed with him more than six years ago, she recalls telling him that she wanted the opportunity to grow. "Little did I know how much opportunity I'd get," she says.

Sleight says she's a frequent attendee and speaker at conferences and training sessions, participating in 10 such events per year. Hummel has helped groom her, she says, by asking her to work on projects such as setting up the project management office, in which she had the opportunity to work with key executives. "When we evolved our Web presence and our project management office, I had to

address the finance committee of the board and tell them about our plans," she says. "It was trial by fire but very important in helping me establish my relationship at that level of the company."

Hummel says he takes great pride in his efforts to recognize the hard work of his employees. He spent \$30,000 to run a series of eight ads on the back of *Sacramento Magazine*, one of which featured photos of three former secretaries who have moved up through Sutter's technical ranks. (Of course, the ad also makes for good PR for Sutter.) He also sends his employees handwritten thank-you notes, birthday cards and anniversary cards.

Such things go a long way toward maintaining high morale. Turnover within IT has declined each year since 2000, when it was at 17.8 percent to a low of 2.3 percent today. One big reason employees stay, says Hummel, is the chance for promotion and growth. —M.L.

system. The message he wants his staff to reiterate to the EITC is that ERP will save up to \$38 million based on ROI analysis.

Like a politician, Hummel carefully considers his audience before addressing them and tailors his message accordingly. For example, when selling doctors on the benefits of bar-coding medications, he emphasized patient safety. To reinforce his message, Hummel shared with them studies from medical journals indicating that more than 51 percent of adverse drug reactions occur at the point of medication administration versus the point of ordering. When discussing the same initiative with the CFO, Hummel included an empha-

ing doctors how to use an articulated ultrasound arm—then new equipment for breaking up kidney stones—among other things. His experience working directly with medical personnel gave him a valuable insight: He now knows better than to bring his laptop to a meeting with doctors. "Physicians are very intuitive and rely on eye contact to read how people are feeling. They see laptops as a barrier," he says.

Dr. Gordon Hunt, a senior vice president and Sutter's chief medical officer, says that the many hours Hummel has spent in operating rooms gives him credibility with the medical staff. "John was close enough to the problems doctors see in delivering care

Sutter's leadership in meetings. "I liken what I do to passing a bill in Congress," Hummel says. "By the time the senators and congressmen make their formal arguments on the floor, they've already visited all the people, done all the arm-twisting and made all the concessions they need to get that bill passed."

While preparing for February's EITC meeting, Hummel discussed one of the agenda items—a potential partnership with another health-care system—with other Sutter executives. The other hospital group (which Hummel won't identify) had approached Sutter in 2004 with a proposal to partner with Sutter to extend Sutter's

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electronic intensive care unit (eICU), a remote monitoring system, to its hospitals. In those conversations, Hummel learned that executives had mixed feelings about Sutter sharing its eICU. There were those who, like him, saw the partnership as a strategic opportunity. Proponents believed that by extending its technical and clinical capabilities into hospitals that might not otherwise have the resources to afford them, Sutter could enhance its reputation. Oppo-

Hummel's goal in the EITC meeting was to gauge how serious Sutter's top executives were about the partnership. Hummel wanted them to make a clear, unwavering decision in favor of or against the partnership because in the past, executives had committed to moving forward with initiatives without adequate consideration, only to conclude later that their decision wasn't such a good one. Unfortunately, such changes of heart came after IT had devoted

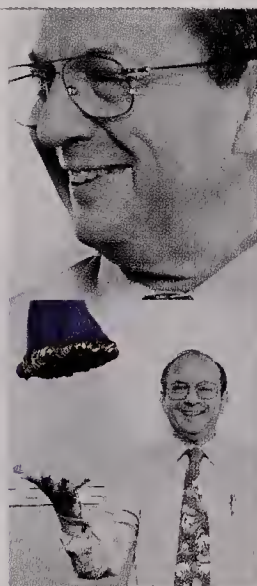
extending the eICU, while risky, was a good strategic move for Sutter. The partnership got the green light; Hummel's magic worked again.

About Users, Not Computers

Hummel didn't always think political machinations were so important. When he had to practice politics for the first time (while at Brim & Associates, a health-care management company), he considered it

John Hummel: Workaholic

Like most CIOs, John Hummel is a workaholic. He arrives at his office in Sacramento, Calif. around 6 a.m. Getting in by the crack of dawn gives him time to do some work before his phone starts ringing and before he has to leave his office for the first of many meetings that take place during the day. He works six days a week and puts in 12- to 15-hour days. On average, he spends two to three nights a week in hotels located close to wherever his next meeting is going to take place in order to avoid sitting in Bay Area traffic. Monday is



the day he preps for the meetings he has throughout the rest of the week. Tuesdays he has his system leadership meeting. Wednesdays are what Hummel calls his "rubber chicken route" because he says he seems to have the same chicken dinner at the board meetings he has to attend mid-week. Thursdays he visits the hospitals and clinics to check in with local IT staff and attends staff meetings. Fridays bring more meetings. Weekends, he says, are for catching up on e-mail, creating PowerPoint presentations, reading and catching up on stuff around his house. —M.L.

nents saw the idea as a burden for a company that was already juggling 800 IT projects, building new hospitals and negotiating with labor unions. Hummel understood this perspective as well, having encountered similar concerns in his own thinly stretched IT organization.

The Power of the Informal

Before scheduled meetings, Hummel makes the time to speak with people privately because he says people rarely oppose popular ideas publicly for fear of being branded as a naysayer. By meeting informally with executives, Hummel's aim is to see if they have specific concerns, and to address those concerns up front. Hummel strives to meet informally in environments where people feel comfortable enough to speak frankly—whether in someone's office, a hallway or the bathroom. The sooner Hummel can head off people's concerns, the sooner he can get them into his corner, and the more likely he's able to prevent them from engaging in passive forms of resistance—such as agreeing with him in public meetings but then failing to act when he needs them to move forward.

time and effort to such initiatives. Even though Hummel believed the partnership was a good move, he was prepared to live with a decision against it.

Hummel had to carefully lead the committee into a discussion about extending Sutter's eICU. He didn't want to be too forceful because he worried that if the project was viewed strictly from an IT perspective, businesspeople wouldn't see it as a priority and thus wouldn't take the actions necessary to move the project forward. Instead, Hummel wanted the CEO and the EITC to make the call. If the partnership was viewed as the will of the CEO, the organization would intrinsically see it as strategic, and it would be easier for Hummel to get the necessary funding.

When the topic of the partnership came up, Hummel and his staff, while in support of it, balanced their opinions with their own reservations and the general concerns about the initiative that Hummel gathered from other executives. They then asked the EITC to weigh in.

At the end of the meeting, Van Johnson, Sutter's president and CEO, decided that

"cheating" and "a huge waste of time." The value of technology, he figured, would trump any political issues.

He had an epiphany after an unsuccessful attempt to facilitate a meeting with doctors about an effort to set up a pharmacy system in the clinic where the doctors worked. The system was designed to show patients' overall use of health-care services—including the pharmacy, radiology and lab. Doctors didn't see the value of the system because they didn't see it as enhancing patient care. Hummel was convinced the doctors would value the data that the system could provide if only he could show them how useful it was, so he armed himself with a 200-page binder filled with charts and stats to demonstrate how the system would help doctors control costs.

Hummel's strategy didn't work. He was so hung up on the system and data that he couldn't see what doctors really cared about. "Over the course of a three-hour meeting, I learned that the doctors...didn't care about the data. No one was listening to me, and I was really frustrated," he recalls.

Sensing Hummel's frustration, Lee Zenlee, his boss at the time, suggested that he

speak with a few of the doctors one-on-one before the next meeting.

Hummel didn't want to spend his time talking with doctors. His job, after all, was to run the computer systems. But he did it anyway because that's what Zenlee advised him to do. Meanwhile, Zenlee was also working behind the scenes to rally the doctors in their court. When Hummel was ready to restate his case, he delivered it in a short report and the doctors were receptive because he and his boss had addressed their concerns prior to the meeting. "There was a remarkable change in attitude," says Hummel. "No one was angry, and they were willing to listen to me. I sat back and thought, 'Wow. Maybe part of my job isn't just running the computer systems. Maybe part of my job is managing the process.'"

Overcoming the Introvert Within

Despite his political savvy and his constant outreach, Hummel considers himself an introvert whose idea of a good time is hiding in a corner reading. He's had to fight his innate shyness in order to get to where he is today, a professional sought out by top politicians for advice and by conference organizers who need articulate presenters.

Schmoozing, says Hummel, is the hardest part of his job, yet something he does out of necessity. He knows that if he's not visible to employees throughout the organization,

they won't know what he's doing or recognize IT's value at Sutter. So Hummel sets goals for himself. For example, members of Sutter's senior management ranks are supposed to attend one to two charitable events each year. Hummel attends seven to eight because it forces him to get out of his comfort zone and interact with people. In such social situations, Hummel's wife of 34 years, Ruth Ann, is his role model. From her, he's learned to discover other people's interests and makes a point of discussing those interests with them. It's basic Dale Carnegie stuff, but it works.

What also works for Hummel, particularly in the high-pressure world of health-care IT, is maintaining a sense of humor and remembering to have fun. "There is so much pressure inside the technology operations of health-care providers that if you're not careful, it will eat you up," says the Alliance's Wallace.

Hummel tries to leaven the often sober atmosphere in IT by staging themed annual team-building and employee recognition

events. "He understands that to drive people, you have to have fun," says Peterson.

One year, Hummel asked more than 700 members of the IT staff to dress up as cowboys, compose a poem about a technology-enabled patient safety initiative, such as the eICU, and sing it in small groups to the tune of a Gene Autry song. The purpose of the exercise was twofold: to force people out of their comfort zone by having them do something they normally wouldn't (such as singing in public) and to rally them around the patient safety initiatives they were working on.

In the end, Hummel's soft side is an asset when it comes to charming his most important stakeholders: the physicians and finance executives. "Joyous, fun people attract you to their way of thinking," says Dr. Toni Brayer, chief medical officer for Sutter's Bay Area region.

Adds Hummel's boss, Sutter CEO Johnson: "John has built an incredibly trustworthy IT organization. He listens carefully. He doesn't overpromise. He's very flexible. He meets his time lines, and he has a lot of champions."

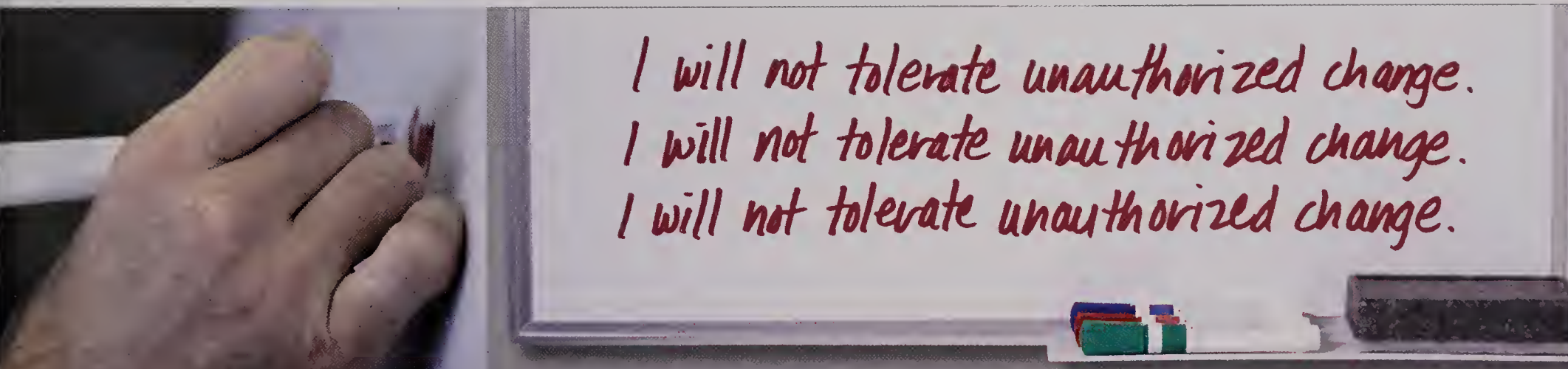
And that's how Hummel has convinced this "tremendously consensus-driven" hospital system to invest \$1.5 billion in IT. **CIO**

A More Rounded Hummel Figure

There's an even more complete portrait of John Hummel on the Web, from the pictures on his walls to the books on his shelves. Find the link to **JOHN HUMMEL: 360 VIEW** at the online version of this article or at www.cio.com/050105.

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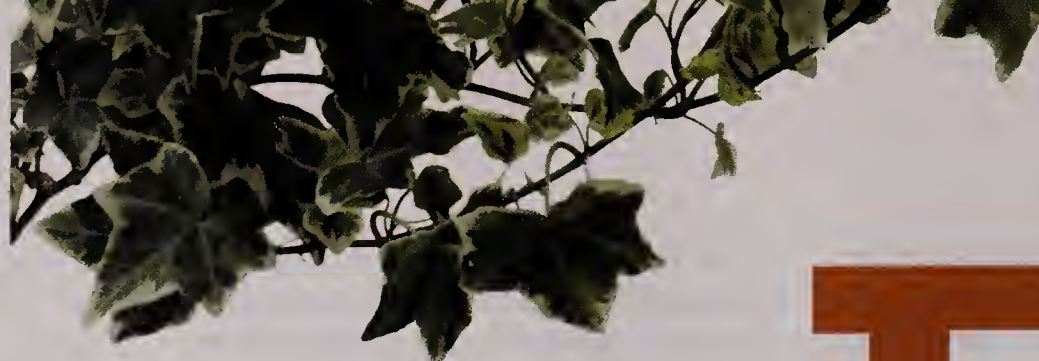
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BIG mess

BY THOMAS WAILGUM

on CAMPUS

Disastrous ERP implementations have given more than a few universities black eyes. Fortunately, alternatives to these complex integrations now exist for those ivy-covered halls.



WHEN STEFANIE FILLERS RETURNED to the University of Massachusetts-Amherst campus last fall, she needed to log into the school's new online registration system, called Spire, to make certain that the courses she had signed up for would allow her to graduate. She also wanted to waive her participation in UMass's health insurance plan. So when Spire crashed the day before classes began, Fillers, a senior, was annoyed. But at least she knew where her classes were—unlike most first-year students.

"The freshmen were going crazy because they didn't know where to go," Fillers says. The Spire system allows all 24,000 students at the Amherst campus to register for classes and perform other online activities. So when it crashed as the result of a



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- ⌘ How the Web plays a critical role



John Dubach, CIO at UMass-Amherst, says he was naive about the amount of testing a new Web portal required.

PeopleSoft Web portal implementation that had been rushed, classes were half-empty for the first three days of the semester. And there were long lines everywhere you looked.

Around the same time, returning Stanford University students were also welcomed by a nonfunctioning Web portal that prevented them from finding out where their classes were. And some 3,000 students at Indiana University were denied financial aid by a buggy new ERP system, even though they had already received loan commitments. While the IT department and financial aid administrators scrambled to fix the bugs in the complex system, short-term loans were processed for those cash-strapped coeds who needed to pay for classes, rent and food.

These recent campus meltdowns illustrate how the growing reliance on expensive ERP systems has created nightmare scenarios for some college CIOs. In every case, the new systems are designed to centralize business processes in what historically has been a hodgepodge of siloed legacy systems. And indeed, that's exactly why college administrators are drawn to ERP systems. They drool over the integrated views that an ERP system offers of finance, HR, student records, financial aid and more.

But those same officials often fail to see the enormous cultural and technical obstacles that can delay—and even cripple—such ambitious implementations. A recent survey found that university ERP implementations have taken far longer than expected and cost five times more than what the projected price tag was. “There are a lot of people who have scar tissue” from ERP failures, says Bob Weir, vice president of IS at Northeastern University—including himself.

University officials often fail to see the enormous cultural and technical obstacles to successful ERP implementations.

ERP implementations are difficult, even in very top-down corporate environments. Getting them to work in universities, which are essentially a conglomeration of decentralized fiefdoms, is nearly impossible. Staff in the largely autonomous departments do not cotton well to the one-size-fits-all strategy of an ERP implementation. Yet for universities, developing all software in-house is not an option. These nonprofit organizations simply don't have the talent and financial resources to create and manage a robust enterprise system. Indeed, representatives from PeopleSoft, which dominates the higher education market for ERP, say that a large part of the problem results from the inexperience of university IT departments and their tendency to rush implementations and inadequately test the new systems.

There is, however, a workable alternative, according to some university CIOs who have endured ERP implementations and lived to tell about it. And that is using an integration middleware layer to stitch together a number of best-of-breed applications. In this environment, the integration layer allows CIOs to plug legacy systems into newer Web-based applications. Northeastern's Weir is using this approach to provide state-of-the-art systems for NU's students and administrators.

“The beauty of the Web is that you can do it all behind the curtain, using a relatively steady interface,” he says.

ERP or Bust

By the mid-1990s, most college administrative systems were a disconnected mess of legacy applications. Forward-thinking administrators knew that they needed to graduate their aging homegrown systems. College administrators loved the idea of having an HR management, financial and student administration system that could unite offices and departments. PeopleSoft was one of the first ERP vendors to promise that views into financial aid information, class enrollment and registration data, staff benefits and faculty course loads would be available in real-time, with increased efficiencies and reduced costs.

The pitch worked.

At the end of 2004, PeopleSoft could boast more than 730 college and university installations, and it was the clear leader in higher ed. However, universities also purchased financial systems from other vendors. One university that bought into the ERP pitch early on was Cleveland State, and it now serves as a cautionary tale for CIOs. In a suit Cleveland State filed against PeopleSoft, the university alleged that the vendor sold it virtually unusable software that caused Cleveland State to lose millions of dollars in revenue because it couldn't collect accounts receivables, and subsequently, it had to install other software to do the job. (On Feb. 25, Oracle—which has since acquired PeopleSoft—and Cleveland State settled; news sources estimate the undisclosed settlement at \$4.25 million.)

Northeastern is another university that succumbed to the ERP siren song, initially at least. The urban Boston university had long-term plans to reinvent itself into a *U.S. News & World Report* top 100 institution, and at the heart of this overhaul would be PeopleSoft software. “My predecessor and his boss bought it hook, line and sinker,” Weir says. Northeastern's former president and the head of IS purchased 22 modules and wanted them installed by Y2K.

In 1998, with his predecessors shown the door and an IS department in disarray, Weir took the top IT job at Northeastern. The new administration charged him with getting the derailed ERP project back on track. The first thing Weir did was bring the administration's expectations back to reality. Instead of installing 22 modules before Y2K, Weir scaled back the plan to just one: PeopleSoft's HR application would replace the noncompliant Y2K homegrown app. He further winnowed the scope down to exclude Northeastern's 11,000 part-time employees from the



Bob Weir, VP of IS at Northeastern University, is in the process of freeing his staff from the slog of enterprise implementations.

HR application; only the 4,000 full-time employees would be in the upgraded system for now. "We had a Y2K deadline, and we bludgeoned our way to the goal," Weir says.

He managed to get through Y2K, but a major question remained: How would he handle the other enterprise system rollouts staring him in the face?

Like Northeastern, Stanford University also bought into the late '90s enterprise software pitch. But unlike Northeastern, Stanford never slowed down its implementation engine. "In hindsight, we tried to do too much in too little time," says Randy Livingston, Stanford's vice president of business affairs and CFO.

Starting in 2001, Stanford implemented student administration systems, PeopleSoft HR, Oracle financials and several other ancillary applications. Four years later, users still complain that they have lower productivity with the new systems than with the previous ones, which were supported by a highly customized mainframe. Users also have had difficulties in accessing critical information on a timely basis. Livingston says many transactions—such as initiating a purchase requisition or requesting a reimbursement—take longer for users to do than with the prior legacy system.

Stanford has also not realized any of the projected savings the vendors promised. "We are finding that the new ERP applications cost considerably more to support than our legacy applications," Livingston says. And he doesn't know how much it will cost to get the enterprise systems working at the level everyone was accustomed to.

But Stanford's biggest problem is that its IT department is still trying to get campuswide buy-in for the enterprise applications, which have necessitated new ways of doing business. And that either leads to nonuse of the new systems or costly customizations to keep everyone happy. For example, Stanford's law school operates on a semester schedule, while the other six schools operate on a trimester schedule. "This means that every aspect of the student administration system needs to be configured differently for the law school," Livingston says. Within the schools, some faculty are paid a 12-month salary; other schools pay by nine months, 10 months or 11 months. "The standard HR payroll system is not designed to handle all these unusual pay schedules," Livingston says.

Livingston has his work cut out for him now that his CIO, Chris Handley, resigned in December 2004 and forced him to take over the IT reins. Livingston has since reorganized the IT department, which he hopes will be better able to manage the enterprise projects going forward. He created a separate administrative systems group that will report directly to him, with responsibility for development, integration and support of the major ERP systems.

The hurdles Stanford and other universities face with the new ERP system are largely cultural ones. For instance, lean staffs and tight budgets at most university campuses usually lead to a lack of proper training and systems testing. At Stanford, Livingston says that plenty of training was offered, but many users didn't take it. He has set up new training programs, including a group who sits side by side with users to help them learn how to do certain complex tasks; periodic user group meetings; website and e-mail lists that offer more

10 ERP TIPS

from College CIOs for All CIOs

- 1** Make sure you analyze and define business processes first; then choose the system that will work best for your organization.
- 2** Don't forget about training; if people don't know how to use the system, they won't.
- 3** Test the system for traffic loads that represent your actual traffic, especially during peak times.
- 4** Don't buy all of your ERP systems from one vendor: A best-of-breed approach can work better because not all of one vendor's modules may best fit your needs.
- 5** Don't go live with an implementation or upgrade at a crucial time of year (higher ed: avoid the weeks before classes start; retail: avoid the weeks before Christmas).
- 6** Make as few modifications to the source code as possible.
- 7** Keep an eye on scope creep. It's much worse on campus than in the Fortune 500.
- 8** Before you sign a contract with an integrator, have the integrator conduct trials with the software on your systems to see if they will mesh. It costs a bit more, but it's worth it.
- 9** Use certified project managers on your staff to run the implementation—not just the person in the room who starts taking notes at the first meeting.
- 10** ERP needs constant human interaction (ideally from CIOs) to keep it up and running. Ninety-five percent of getting ERP right is social and political skills; 5 percent is the actual technology.

—T.W.

help; and expert users embedded in the various departments who aid their colleagues.

Stanford's IT was still struggling with integrating the enterprise systems when the newly launched PeopleSoft Web portal (called Axess) crashed last fall. Like the new UMass portal, Axess couldn't handle the load of all the returning students trying to log in to the untested Web-based system at the same time, Livingston says. Stanford was able to fix those problems relatively quickly, but Livingston and his staff continue to struggle with the enterprise projects. The university's departments remain "highly suspicious and resistant" of his efforts to standardize and centralize business processes, Livingston says.

Overloaded at UMass

At the University of Massachusetts, IT hoped to originally have the Web portal rollout installed by March 2004. Delays in testing the Spire system, however, forced them up against an immovable deadline: the return of 24,000 students to campus over Labor Day weekend.

By midday Tuesday, after some periods of slowness, "the system choked," says John Dubach, CIO at UMass-Amherst. It stayed down for a long four days at the most crucial time of the year—when students needed to add or drop classes and find out where their classes were on campus.

Dubach would later realize that his staff did not do enough load testing on Spire. A configuration problem with the password system also reared its ugly head. An explanatory e-mail had been sent out to the students, informing them of the password requirements in the new system. It turns out no one read the e-mail, and therefore, students flooded the "I forgot my password" option because they couldn't log in. After about a thousand of these requests, the system buckled. "We didn't test for a thousand password requests," Dubach says.

The opening day nightmare was compounded by the fact that PeopleSoft seemed unable to help. "We were looking for help left and right," Dubach says. "PeopleSoft had suggestions but no solutions to anything. They hadn't had that much experience with the portal in this type of environment."

PeopleSoft representatives see it differently. Jim McGlothlin, now a vice president with Oracle who also worked for PeopleSoft, says that onsite consultants for the vendor did help UMass out. McGlothlin says universities sometimes experience problems with the software because of their tight deadlines and inadequate load testing of the new system. "You need to allow a couple of weeks to do proper load testing," he says.

After four long days and nights, Dubach and his staff were able to corner most of the problems. Students and faculty were allowed back onto the system without restriction the following Monday. A few periods of slowness raised the anxiety levels during the weeks after, but the system never went down again. Dubach reports that student registration in November for spring '05 classes went smoothly.

Dubach took away some valuable lessons. First off, he says he was naive about the amount of testing and fine-tuning such

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Ask First, Implement Later

NORTHEASTERN'S CIO USES AN ELECTRONIC SURVEY TO FIND OUT WHICH I.T. PROJECTS HIS USERS REALLY WANT

For all of Bob Weir's technological accomplishments at Northeastern University, it's in the crucial area of getting stakeholder buy-in that the vice president of IS says he has been most successful. Using a simple methodology called the Murphy Tool (named after Weir's employee, Tom Murphy, who thought it up), Weir is now better able to gauge which enterprise projects to invest in and which ones to pass on. "How

do you compare whether you should replace an HR system or upgrade the network?" he asks. "Those are hard things to compare."

With the Murphy Tool, Weir surveys the top 40 senior leaders at NU on how they would value their individual IT project needs and what would be the critical success factors and associated risks with each project. Criteria such as competitive advantage or financial benefits are weighted differently, using a point system that assesses each project's value.

With this new data, driven solely by Weir's

constituents, he can see where he has strong business support for projects and where he doesn't. "It allows you to say, Something scored low, and that's because we're not ready to do this," he says. The tool also lets everyone speak the same language on a project because all of the key stakeholders are fluent in what qualifies a project to be approved at the outset. "By having that articulation, we all know the critical success factors that are unique to the project and Northeastern," Weir says.

—T. W.

a new and intensive system demanded. In the future, Dubach says, he will try to coordinate hardware upgrades with application upgrades. When he buys new hardware, he will install the software upgrades on the new hardware, test it and have it working perfectly before he replaces the old systems with the new ones.

While Dubach says he is going to stick it out with PeopleSoft, in large part because UMass has already purchased the software licenses, some university CIOs say there is an easier way.

From the looks of it, Northeastern's student self-service portal, called MyNEU, has all the features of a modern-day Web portal, like Stanford's Axess and UMass's Spire. Each student's personalized site has links enabling him to check his courses, grades, finals schedule and, if he has a campus job, his latest payroll information.

But who would ever believe that lurking behind it all is a 25-year-old Cobol mainframe, chugging along. "It works like a champ," says Weir. The interface keeps the student body happy and permits Weir to keep that mainframe in service while he works on other forward-facing applications.

Weir and his staff are able to integrate the front ends and back ends by using using middleware—in this case, IBM's WebSphere product among others. So while HTML and Java code allow students to use the add-drop class function on their

MyNEU page, WebSphere is doing the heavy lifting behind the scenes, interactively "typing" the Web information into the mainframe. In this way, Northeastern's IT can utilize Web interfaces to keep the front end looking pretty without having to rip out the back end with every upgrade. "The

beauty of the Web is that you can mask all of that to the customer," Weir adds.

Weir hasn't completely abandoned enterprise applications. His team is just now putting the finishing touches on the PeopleSoft HR system it began working on back in 1998; those 11,000 part-time workers are finally being added to the HR system. In February 2002, NU also finished a PeopleSoft contributor relations module that it started in 2001.

Weir's approach has been to use the PeopleSoft software where applicable and to add other elements to the system as needed, integrating everything via the middleware layer. Some may call it "lipstick on a pig," but Weir and his staff are in the process of freeing themselves from the slog of ERP implementations and upgrades. And the key advantage of this approach is that IS matches software to the department's needs—and doesn't try to force departmental processes onto the software, which can result in costly customizations.

In this environment, Northeastern will have the flexibility to unplug one app from the mainframe, plug in another application and not worry about integrating the two applications in the same tightly coupled way you need to with standard ERP integration. Right now, integration is "like a pile of spaghetti. If you take one meatball out, you got to hook back up all those noodles," Weir says.

In the future, he believes that Web services will allow easier removal of the various applications. "You can pull [applications] out and hold the rest of them steady," he says. Weir also plans on buying enterprisewide software from vendors that offer open architectural standards and interfaces. Some ERP vendors, including Oracle, are making noise about doing just that.

"I'll never rely 100 percent on any one vendor," Weir says. "They don't have everything you need." **CIO**

More ERP Reality Check

CIO Executive Editor Christopher Koch has a few things to say about ERP—collegiate and otherwise—in his blog. Start with his manifesto, "The ERP Pickle," then keep up with his weekly musings on I.T. **STRATEGY**. Go to www.cio.com/blogs/itstrategy.

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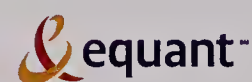
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How to Get the Most Out of VCs

It's the job of venture capitalists to know a lot about new technologies, emerging providers and the shifting IT landscape. In fact, they're betting the farm on that knowledge. Yet CIOs do not reach out to the VC community as often as they should. At a recent CIO Executive Council meeting, fewer than half of the 35 members present said they had been in touch with VCs in the past year. Time, other priorities and general skepticism that the relationships will provide any real benefit keep CIOs from tapping into that community, they say.

You understand why VCs would want to work with CIOs: to confirm that the companies they fund are correctly positioned in the marketplace and addressing a business need, to encourage CIOs to become reference clients, and to validate the competency of their portfolio companies' management teams.

What CIOs might not know is what

they can gain by working with a VC. By having trusted VC partners, they get insight into emerging technologies when planning their own technology strategies. They learn about the financial stability and market potential of companies whose products they are evaluating. They are able to zero in on specific technology solutions without having to talk to a whole slew of vendors. And in many instances, they can get involved in product development, market introduction and even customer development to enable a promising new vendor to grow and succeed. Given the bevy of benefits many of our members glean from working with VCs, we asked them to share their suggestions on how to set up and maintain good working relationships.



RANDY KROTOWSKI
ChevronTexaco

1] Understand your needs. It's the million-dollar question: What are you hoping to achieve by working with a VC? The answer will vary depending on specific business needs, time frame and corporate strategy. Many CIOs are likely interested in solutions to today's business problems or in looking at what is coming in the next few years to meet longer-range needs. "VCs have cool, neat stuff. But you aren't looking for cool, neat stuff," says Randy Krotowski, general manager of the business and technology architecture program at ChevronTexaco. "You need to focus on what areas are truly important to your business," he adds. Right now, for example, Krotowski is working on an initiative to redesign ChevronTexaco's IT strategic planning, enterprise

Continued on Page 94

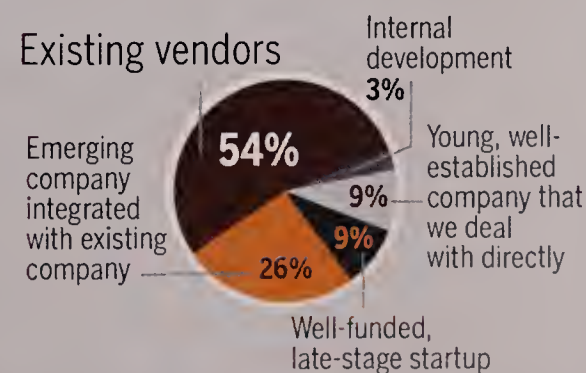
FINDINGS

What You Think About VCs

How seriously do you feel VCs take your feedback?



What is the most likely source of new technology for your company?

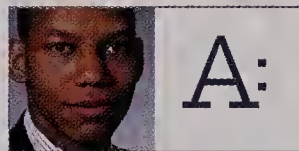


SOURCE: February 2005, Informal poll of 35 CIO Executive Council members

[PEER COUNSEL]

Q:

How can a CIO from a small, non-Fortune 500 organization influence VCs and thus the direction of new, innovative technologies?



MYKOLAS RAMBUS
CIO, W.P. Carey

A:

As a midsize company, we often have to choose between overpriced solutions that are designed for much larger organiza-

tions and less reliable technologies created by new companies. When we identify business requirements that demand a unique technology approach, we usually find that the market of entrenched products is lacking.

We then turn to small companies, often backed by venture capitalists, as solution partners for these complex challenges. We engage with the portfolio companies, aiding in product design, serving as a reference customer and bringing to bear our own industry contacts to help the company grow. Working with portfolio companies this way captures the attention and imagination of the venture capitalists who back our small vendors and, most important, allows us to influence and quickly bring to market products that meet our needs.



LEV GONICK
CIO and VP of IT services,
Case Western Reserve
University

A:

At Case Western Reserve University, we encourage and promote innovation and entrepreneurship by funding new technology products and companies. Over the past

decade, we have developed a comprehensive system of pipeline support for new technology, including the idea stage, disclosures, early-stage investment for business-plan development and seed funding for prototyping.

Case takes four to six companies to market each year with term sheets reflecting a portfolio of investments from top-shelf VCs and local investors. We benefit more than by just seeing new technology products. With this initiative, Case has experienced additional revenue of \$8 million to \$10 million annually from the companies over the past three years.

How to Get the Most Out of VCs *Continued from Page 93*

architecture and decision-making processes in an effort to better identify which technologies the business will need in three to five years. By doing so, he knows what technologies are worth discussing, and he can be deliberate in selecting a VC partner. "Instead of saying to a VC, 'We might need this,' we'll be able to say, 'We *will* need this.'"

2] Understand who you're working with. "Early-stage VCs tend to invest in companies that are developing technologies and products in the future, anywhere from 12 to 24 months. "They will want feedback on their ideas and whether they are on the right track in terms of addressing real problems," says David Webb, CIO of Silicon Valley Bank. "Later-stage investors will invest in companies that have well-defined products and are looking for CIOs who are ready to purchase or at least to try a beta version." If you are interested in purchasing a new technology now, go with a late-stage firm. If you are sizing up the technology landscape for five years from now, talk to early-stage VCs. Not all venture capitalists are created equal; asking some questions about their approach to their investments will go a long way toward selecting the right partner.

3] Work with multiple VCs, and keep in contact regularly. "No matter what your goal, it will be important to develop relationships with multiple firms to get the broadest view possible—whether across a particular type of technology such as wireless, a specific solution area like security or to see product examples across the investment lifecycle," says Webb. "There is no central marketplace for the VC community. The CIO looking to tap emerging technology must invest time and energy to build a network of established contacts among VCs." ChevronTexaco's Krotowski likes to work with VCs from at least three different firms at any one time. Staying active in the community is also important. "If you pop in every two years, it is hard to form relationships and keep them healthy," Krotowski says.

4] Define the scope of the relationship. Lac Tran, CIO at Rush System for Health, advises CIOs to create and contribute to a clear, written agreement with the VC at the start of the relationship. This will help avoid any misconceptions or disagreements over responsibilities as the relationship develops. "By including items like the expected level of confidentiality of business and financial data, ability of the CIO to beta-test new technology, participation on the board, and the projected scope and outcomes of the VC-sponsored products, the VC and CIO will have a common set of expectations," says Tran.



LAC TRAN
Rush System for Health

5] Manage VCs better than they manage you. Just as VCs want to get the most out of you, you want to get the most out of them. Council members advise CIOs to design the relationship so that each party gets the information it needs. "The closer the relationship, the greater the temptation for the VC to ask for more of your time, more advice and more positive assessments," says Webb. As Tran found out, VCs want to move the process along quickly, especially during the early stages. But in doing so, they could be putting the product at risk and hurting credibility. Due diligence and attention to detail will ultimately help in the launch of a successful new product.

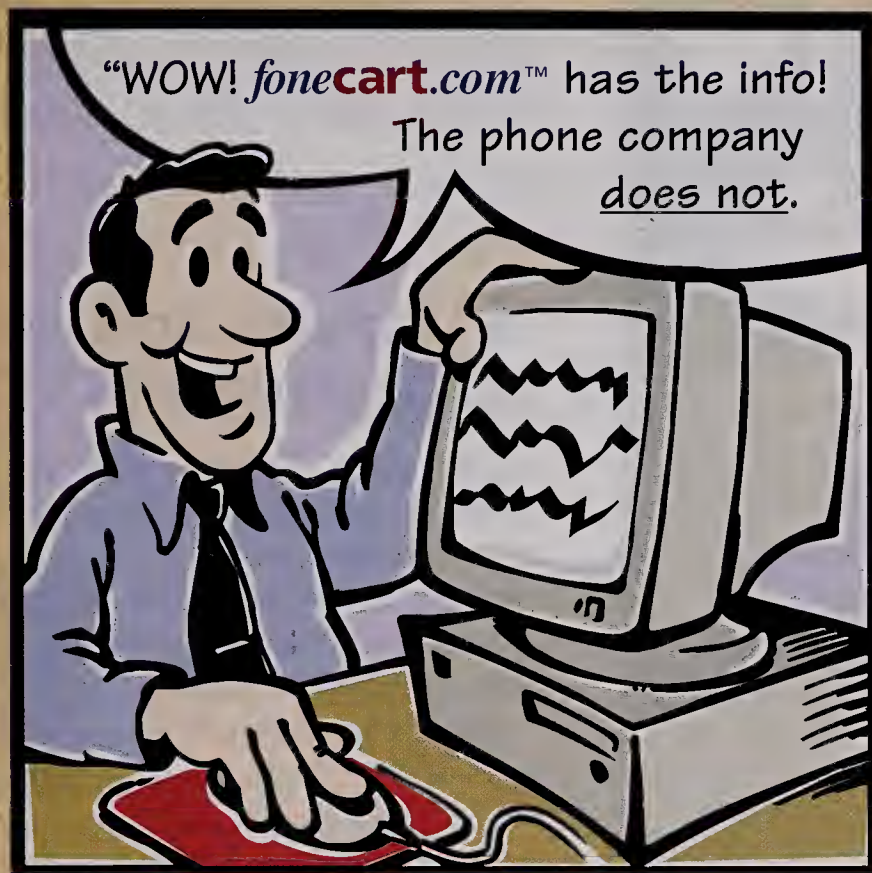
—Carrie Mathews, Member Services Manager, CIO Executive Council

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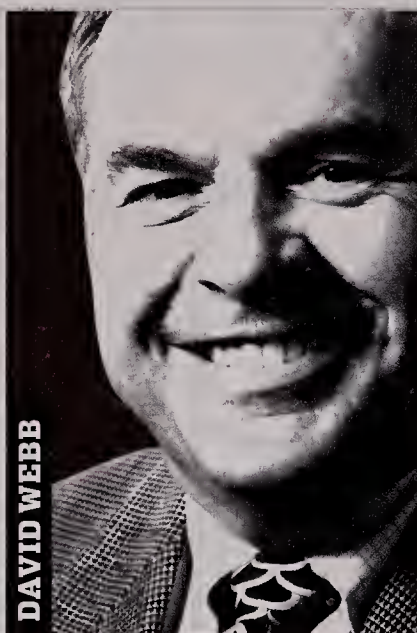
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➤ HELPFUL HINTS HOW TO MEET VCs

Many VCs have specific experience and qualifications in mind for the CIOs they want to work with on a project, and often they prescreen candidates. For that reason, CIOs of smaller companies may have difficulty getting noticed, especially if they are located in regions outside of typical VC hotbeds such as Boston and San Francisco. David Webb, CIO at Silicon Valley Bank, passes along some tips for getting your foot in the door.



DAVID WEBB

- ❑ Network with venture capitalists at conferences. An initial meeting may lead to further discussions at VC-sponsored venues and showcases.
- ❑ Use professional organizations to your advantage. These organizations provide a chance for you to do research on firms and potentially meet with VCs.
- ❑ Attend road shows put on by young companies with developing technologies. You can provide feedback on the product and learn about VCs backing the companies. You may also be able to identify VCs to work with by speaking with others at the show.

[ONE::LINER]

"The biggest challenge for VCs is that they can't afford to operate in a vacuum. We are their market."

—RANDY KROTOWSKI, GENERAL MANAGER, BUSINESS AND TECHNOLOGY ARCHITECTURE PROGRAM, CHEVRONTXACO

WHAT I DID WITH MY VC LAST YEAR

69%

advised VCs on product development.

25%

advised VCs on their business and/or industry needs.

SOURCE: February 2005, Informal poll of 35 CIO Executive Council members

[PERSPECTIVE]

A Venture Capitalist on Working with VCs

DAVID SKOK, GENERAL PARTNER AT MATRIX PARTNERS, a venture capital firm focusing its investments on startups in the Internet infrastructure, IT, telecommunications and semiconductor markets, offers advice from his side of the fence.



DAVID SKOK

1. HOST AN EMERGING TECHNOLOGY EVENT. "Have a VC bring in a group of companies in a particular area for short presentations and some Q&A. In less than three hours, you learn a tremendous amount about a particular area, and the VC gets some good feedback," says Skok.

2. GO FOR A TOP-TIER FIRM. "You want a firm that sees all of the deals, selects what it considers the most promising companies and receives a high rate of return on its investments," says Skok. Some top-tier firms are not in the press but have a higher rate of return than some of the more recognizable names. In addition to choosing firms that specialize in your specific area of interest, you might want to speak to the CEOs of some of the younger companies. They are knowledgeable about who is doing what in the VC space.

3. MAKE TIME FOR VCs. "Very few CIOs have relationships with venture capitalists, in my opinion, because they are so busy putting out fires that they have no time for emerging technologies," says Skok. "But if you know who to work with and how to get the most out of the relationship, VCs can bring you a lot of value."



The CIO Executive Council is a professional organization for CIOs founded by CXO Media, CIO's publisher. To learn more about the Council, visit www.cioexecutivecouncil.com or contact Managing Director Martha Heller at mheller@cio.com or 508 988-6738.

UNDERSTANDING IP RISK IN SOFTWARE

Knowing the Risk

Learning about intellectual property risks and software indemnification goes a long way toward protecting your company from potentially costly legal disputes.

Traditionally, IT executives have focused on a few core issues when making software decisions: Will the solution address our needs? How much will it cost? How hard is it to deploy and manage? But with the current focus on corporate governance and risk mitigation, executives increasingly recognize they must consider an additional issue: the intellectual property (IP) risks related to software that their companies have licensed, used and deployed.

"Under the patent law, it does not matter that your company was an 'innocent infringer,'" notes Jeff Kushan, an attorney with Sidley Austin Brown & Wood LLP, a law firm whose specialties include patent licensing and litigation. "Nor does it matter that the product was developed by someone else, or even distributed without charge. A patent owner is entitled to pursue any party that uses the patented technology without its authorization. Since most software patents cover technology that is put into use by end users [rather than developers] of software products, these end users become the obvious targets for litigation."

PROTECTING YOUR COMPANY

Managers today face increasing emphasis on corporate

compliance and risk disclosure. Many companies erroneously believe that only software suppliers need to worry about IP risk. In reality, any company using software should identify such risks, including the risk of an IP lawsuit, and develop strategies for protecting against them.

The first step is asking, "Who owns the IP for the software I run today?" Answering that question requires that IT executives work closely with their legal and risk-

management advisors, examining the risks and protection included in each current software agreement. One critical way to limit risk: Insist that all software vendors provide IP indemnification, which is essentially a form of insurance in which suppliers protect customers in the event of IP lawsuits.

in • dem • ni • fi • ca • tion

Software IP rights are based on a combination of copyrights, trade secrets, trademarks and patents—any of which can give rise to legal disputes. One of the best ways for software users to manage IP risks is to choose software that comes with strong IP indemnification. Indemnification is like a form of insurance in which the software supplier helps protect the user in the event of an IP dispute.

PERFORMING A RISK ASSESSMENT

Companies can evaluate their risk profiles with a few simple steps. First, identify the software your organization uses. Companies face unique risks in two software categories: software downloaded or acquired without any commercial vendor's backing and open source software provided by commercial vendors. Each requires a different form of due diligence.

SOFTWARE WITHOUT COMMERCIAL BACKING: This category requires special risk-mitigation strategies because IP indemnification typically cannot be acquired for such software. By deploying non-commercial software your organization inherits the responsibility for any IP disputes involving that software—a fact that surprises many companies.

OPEN SOURCE SOFTWARE WITH COMMERCIAL BACKING: The unique nature of the open source development process and product licenses creates challenges for the acquisition and use of third-party property rights, particularly patent rights. Such details are important: Not all software includes meaningful coverage.

Once you've catalogued your company's software, talk to your vendors, with the most important question being whether their software licenses come with IP indemnification. "Ask as well what the vendor does to ensure that its products do not infringe anyone else's intellectual property, and how they have responded when they are accused of infringement," Kushan says.

When you've completed your due diligence, put the risk in perspective. There is a low likelihood your company will face an IP lawsuit for software use—but being the unlucky exception is an expensive proposition.

COMPARING THE VALUE OF INDEMNIFICATION PROVISIONS

While IP indemnity protection can help protect organizations from risk, keep in mind that the quality of indemnification provisions varies widely. "Most companies take indemnification for granted," says Laura DiDio, senior analyst for application infrastructure and software platforms for the Yankee Group, a Boston-based research and consulting firm. "But not all indemnification provisions are created equal, so organizations need to pay close attention to the terms and conditions of their licensing agreements."

For example, in researching IP indemnification

among several major vendors, IDC analyst Stephen Graham found a wide set of offerings and divergent approaches. "Because of the nature of open source products, companies like Novell, Red Hat, and HP stipulate additional requirements, such as additional contractual agreements that need to be signed, additional or minimal purchase requirements or specific time-

frames within which events must occur," says Graham, group vice president at the Framingham, Mass.-based research firm.

"Microsoft's new IP indemnification policy effectively raises the stakes for protecting software customers caught in the crossfire of vendor disputes," Graham says. "In addition to offering customers high levels of legal and financial protection, the policy is relatively easy for customers to engage."

In fact, Microsoft's policy, which is among the strongest of its kind, includes coverage for all client and server software (except industry or task-specific embedded software). In comparison, leading providers of the Linux operating system offer far more limited indemnification, if it is offered at all. Microsoft's indemnification includes:

- Coverage for the four main types of infringement claims (patent, copyright, trade secret and trademark).
- No pre-set monetary cap.
- Coverage for a broad range of possible costs related to IP disputes, including legal defense, settlement fees, out-of-pocket expenses and other specific costs related to IP disputes.
- Broad coverage for commercially available Microsoft software, excluding certain embedded software.

Five Questions

When you're evaluating a vendor's indemnity provisions, attorney Jeffrey Kushan recommends asking the following questions:

WHAT INTELLECTUAL PROPERTY IS COVERED?

Make sure that you're covered for main IP rights: patent, copyright, trade secret and trademarks.

WHAT TRIGGERS AND TERMINATES THE INDEMNITY OBLIGATIONS?

For example, must you notify the vendor within a certain period of time?

WHAT IS THE EXTENT OF FINANCIAL LIABILITY PROVIDED BY THE VENDOR?

Also check for specific limitations on financial obligations for IP indemnity. For instance, does the agreement cover such items as court costs and out-of-pocket expenses?

HOW WILL THE VENDOR MEET ITS FINANCIAL OBLIGATIONS?

Ask for an official detailed explanation.

WHO CONTROLS ANY LITIGATION?

"The fact that Microsoft has extended IP indemnification to its end customers speaks to Microsoft's commitment to its customers," says Julie Giera, a vice president at Cambridge, Mass.-based Forrester Research Inc.¹ "As customers start to compare vendor commitments regarding IP indemnification, Microsoft will stand out."

For more information on Microsoft's indemnity, visit:
www.microsoft.com/indemnification.

By licensing software with strong end-user IP protection, individuals and organizations help shield themselves from costs commonly associated with such disputes.

THE BOTTOM LINE

Corporate risk-management strategies increasingly recognize the importance of IP indemnification. "IP issues have become more of a risk in recent years," says Matt Rosoff, analyst at Directions on Microsoft, an independent Kirkland, Wash.-based research firm focusing exclusively on Microsoft. "Organizations need to have a policy in place and realize there's a risk of software IP infringement and understand that IP indemnification provided by software vendors can be one piece of that policy."

Organizations seeking to reduce their risk should understand and prioritize the importance of software IP issues. For most, that involves recognizing that risks exist, then working closely with their legal and risk-management advisors to examine current software use and legal exposure. Finally, companies should consider the quality of IP indemnification in all future software-purchase decisions.

Case Studies:

ADC Telecommunications: The Proactive Approach



With 7,500 employees, \$784 million in annual sales and customers in more than 150 countries, ADC Telecommunications is a good example of how and why companies are proactively managing the risk of IP infringement.

"Five years ago, the issue of software IP didn't even enter our minds," says Jamey Anderson, technology services manager for the Eden Prairie, Minn.-based communications equipment provider. "But now, with the Linux lawsuits happening, it's something I pay a lot more attention to. The fact that Microsoft stands behind its software with IP indemnification is a big deal to us. We can be guaranteed that Microsoft will back us with no financial cap—no matter how big a lawsuit may become."

Although ADC has identified IP issues as an important consideration in its software deployment, Anderson acknowledges the difficulty of quantifying the risks—especially since many IP-related lawsuits are settled out of court or before trial. But while it may be hard to cite dollar figures, Anderson likens the appropriate analysis to doing a security-risk assessment.

Regal Entertainment Group: Why IP Risk Matters

"While IP risk isn't our top IT priority, it's something that we focus on with every contract we do," says J.E. Henry, senior vice president and CIO at Knoxville, Tenn.-based Regal Entertainment Group, which operates 550 movie theaters with 6,200 screens nationwide.

As CIO of the \$2.5 billion company, Henry must ensure that the software powering 9,000 point-of-service workstations and 1,200 desktops operates correctly.

But he's equally concerned about the risk to Regal's reputation as a well-managed, fast-growing business. "If we buy software from a provider that has stolen IP from someone else and there's an

injunction that precludes us from using that software, it would significantly affect our ability to do business," Henry explains. "We're a public company. The last thing I want to see is our name posted all over *BusinessWeek* saying that we made a bad decision and didn't do our due diligence when deploying software."

That's why after a lengthy consideration, Regal opted for deploying Microsoft products over a Linux alternative for its new point-of-service systems. "I feel good about Microsoft and their approach to how they do business. Their contracts are generally very strong in nature and obviously they have tremendous resources if legal issues arise," Henry says. "There's a huge difference between using a product from Microsoft and picking up a piece of freeware from somewhere [where] you don't know who developed it, there's no entity behind the product, and even if there is, it doesn't offer full indemnity."



¹"MICROSOFT: PROTECTING ITS CUSTOMERS",
 JULIE GIERA, FORRESTER RESEARCH, DEC. 20, 2004

Comparing Indemnification for Microsoft Windows and Linux (Source: IDC, 2004)

VENDOR	PROGRAM / INITIATIVE	TRIGGER	TO QUALIFY	FINANCIAL COVERAGE	CONTROL
Microsoft	Intellectual Property Indemnification. Microsoft provides IP indemnification on all its client and server software (but not embedded software offerings, specifically Windows XP Embedded and Windows CE), regardless of whether it's acquired through the company's volume license program or through other means (e.g., retail outlet or manufacturer). Indemnification protects end users from exposure to legal costs and damage claims related to patent or other IP disputes (including patent disputes, copyright, trademark and trade secret claims).	No addendum or registration is required. The customer is required to notify Microsoft promptly in writing about the claim.	Customers can rely on either specific contractual indemnity that might be provided in their volume agreement or the stated indemnity policy. Windows XP Embedded and Windows CE products are specifically excluded.	Microsoft states that there are no preset caps on legal costs but also that it will help protect the user from costs associated with defending the claim and court-awarded damages.	Microsoft has sole control of defense and settlement
Novell	Novell Linux Indemnification Program. This is a licensing addendum available to qualified Novell customers for specific supported products. Novell states that it will defend customers having this addendum in the event that they face copyright litigation.	The customer signs the licensing addendum no later than 10 days after obtaining the indemnified Linux product. The customer must promptly notify Novell of the claim.	Customer requirements include an annual minimum purchase threshold (currently \$50,000) within the preceding year. Customers must maintain upgrade protection for the product, have a premium service-level contract, and register for the program within 10 days of obtaining the product.	Damages are restricted to the lesser of \$1,500,000 or 125% of the total amount paid for licenses, upgrades, and updates for the product. Novell will also pay the customer's legal fees, which do not apply to the cap.	Novell is provided control of the defense and related settlement negotiations.
Red Hat	Open Source Assurance Plan. Established in August 2003, the company created the Open Source Now Fund (a nonprofit corporation) with a \$1 million commitment to assist open source software developers with any legal expenses associated with litigation related to the development of software under the GPL or other open source license, and to prepare educational materials related to such software and litigation. An Intellectual Property Warranty was added in October 2003—a promise by Red Hat to either obtain the right for customers to continue to use the software consistent with this agreement; or modify the software so that it is noninfringing; or replace the infringing component with a noninfringing component if there is an IP issue. In August 2004, the company announced a partnership with Black Duck Software to develop joint seminars on best practices in IP risk mitigation and offer joint services.	Customers must have all Red Hat software registered with Red Hat to qualify for the warranty.	To qualify for the IP warranty, companies must be customers with valid, registered Red Hat Enterprise Linux subscriptions covering all Red Hat Enterprise Linux software used by the customer.	The warranty is subject to any limit of liability specified in the customer's subscription agreement. Specifically, the license agreement excludes liability associated with incidental or consequential damages.	With regard to the IP warranty, Red Hat has the option to obtain the rights for the customer to continue to use the software, modify the software so it's noninfringing, or replace the component with a noninfringing component.
Hewlett-Packard	HP's Linux indemnity program. Initially announced on September 24, 2003, the program offers intellectual property indemnification against SCO-related lawsuits to customers that purchase Linux-based products and services directly from HP or an authorized HP reseller.	Customers must register, and an indemnity agreement needs to be executed.	Customers must purchase Linux subscription services from HP or an authorized HP reseller, run the Linux operating system solely on HP hardware, sign an indemnity agreement with HP, and not use or modify the source code. The indemnity program does not cover applications that run on Linux.	HP states that there are no financial caps in its program.	HP has sole control of defense and settlement
Open Source Development Labs (OSDL)	OSDL Linux Legal Defense Fund. This fund was created in January 2004 with approximately \$3 million in initial pledges. It's intended to defray the legal expenses of Linux end users who may become involved in litigation with The SCO Group on issues that affect the Linux community and industry. The fund will also cover the legal expenses of Linus Torvalds and OSDL in connection with the pending SCO litigation.	Applicants must submit a signed, written request to OSDL. The OSDL board of directors will determine if a case meets the established criteria.	The fund will be used only for the legal defense of Linux end users sued by SCO where the case involves copyright or other IP issues that affect the Linux industry. The fund applies only to end users and not to the developer community.	OSDL does not promise or guarantee the amount of legal costs that will be covered.	Recipients must sign an agreement, prior to receiving the fund, containing the terms of the agreement to cover legal costs, and expenses.

Note: IBM does not offer a commercial Linux operating system distribution and as such does not license it under its agreement terms. The policy of IBM is to not offer indemnity for claims made against users of Linux but instead rely on programs from Linux distributors such as Red Hat and Novell to assist customers concerned about intellectual property risk. In addition, IBM (along with companies such as Intel and MontaVista) has contributed to the Open Source Development Labs (OSDL) Legal Defense Fund.

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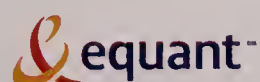
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Careers in technology are exciting



Much has been written about the next generation of technology leaders in America. A recent piece in *The Wall Street Journal* titled "Even Tech Execs Can't Get Kids to Be Engineers" ratcheted up the rhetoric on the topic by relating stories about why the offspring of tech execs planned to eschew careers in technology.

Yes. Tech work can be hard. But it can also be fun and rewarding. It most certainly will shape America's future economic growth.

There is a tremendous upside to tech work in America. Why? Because there still remains another 58 years (April 5, 2063, to be exact) until Zefram Cochrane, an eccentric, fictional scientist, invents warp drive technology. Cochrane takes Earth's first warp space trip in the movie *Star Trek: First Contact*.

My theory might seem a bit "spacey," but it is firmly grounded in that wonderful word optimism.

One positive legacy from the irrational, exuberant years of the late 1990s was the "can do" attitude of entrepreneurs, which held that dreams rather than customers drove business plans. While we now know that cold cash won out over hot ideas, we must return to optimism when it comes to technology's possibilities.

The past 10 years has been an era in which people and businesses got on the Net. The next 10 years will be an era marked by what people and businesses do on the Net. While I don't expect American techies will invent warp drive travel by 2015, I am optimistic that contributions from American engineers will, for example, make an economy powered by hydrogen a possibility by then. And that's just one field. The possibilities in commerce, telemedicine and education are countless.

Who knows where the precursors of Zefram Cochrane are in America right now? A good bet is they are optimists logging on to NASA's warp drive webpage. (See www.nasa.gov/centers/glenn/research/warp/warpstat.html.)

Let's work together to get this industry and its career pipeline up to warp speed. Send me your ideas. I will share them in a future column. It's one way we can make our industry live long and prosper.

Gary J. Beach

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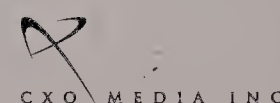
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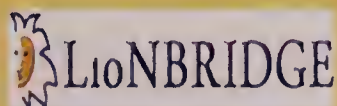
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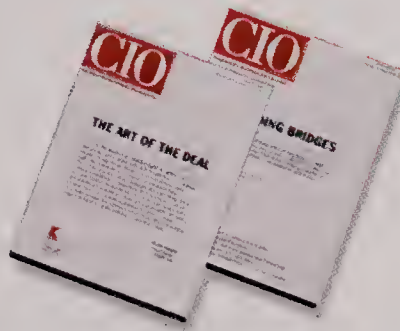
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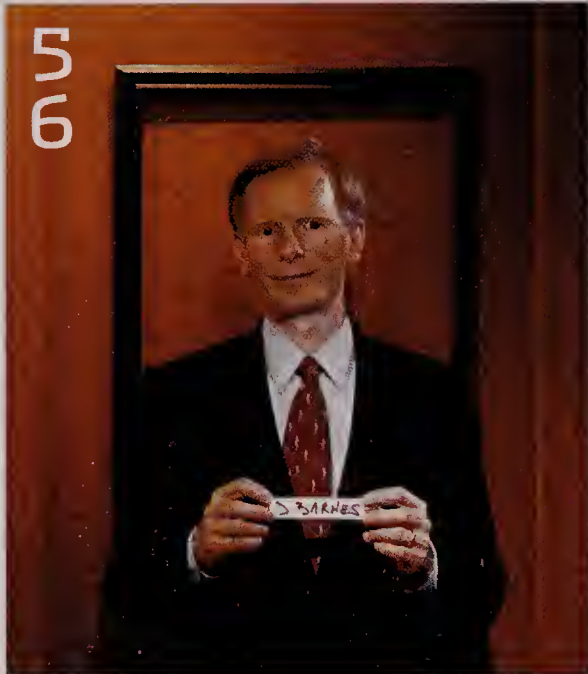
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Dave Barnes is UPS's new CIO because that's the way the company planned it.

56 | NOTHING SUCCEEDS LIKE SUCCESSION

On Christmas Eve 2004, Dave Barnes was named CIO of UPS. The 28-year UPS veteran's boardroom coronation as the third CIO in UPS's 98-year history was quite low-key, but behind it lay an elaborate succession plan. That planning is central to UPS's culture, but unfortunately, it is fairly uncommon elsewhere. In fact, CIOs reportedly do a poor job of succession planning, even though research indicates that those CIOs who do a good job of it stand a better chance of being promoted. Lack of succession planning also deprives a company of the benefits of continuity, threatens the organization's institutional memory and generally has a negative effect on morale. UPS uses a talent identification program, a job rotation regimen and a competitive selection process that is relatively close to being apolitical. The company also appears to have solved the tricky timing question of when to announce the heir apparent. *By Thomas Wailgum*

48 | COVER STORY BOUND TO FAIL

OVER THE 2004 WINTER HOLIDAYS, Comair's almost 20-year-old system for flight crew scheduling crashed, canceling or delaying 3,900 flights, stranding nearly 200,000 passengers, and eventually costing Comair and its parent company, Delta Air Lines, \$20 million—not to mention prompting an investigation by the U.S. Department of Transportation. Neither Comair nor Delta had taken steps to mitigate the risk the system posed, although the problem had long been identified. Legacy systems exist at the core of many businesses, and they cannot handle the velocity and volume of today's transactions. To avoid a Comair-like failure, CIOs must test these mission-critical applications thoroughly, doing performance tests at least annually, simulating conditions that can lead to failure. They must make risk management an ongoing process. *By Stephanie Overby*

66 | MULTIPLE CHOICE ANSWERS

BY WORKING WITH MULTIPLE OUTSOURCERS, rather than signing megadeals with a single giant vendor, CIOs hope to take advantage of a wide variety of vendors' specialties, fostering competition between vendors while reducing costs to the enterprise. But as CIOs at Procter & Gamble, Mattel and GM have learned, managing a stable of outsourcing partners can be time-consuming, complicated and expensive. To make sure they are getting the most out of these arrangements, CIOs need to dedicate staff to oversee each relationship and establish regular performance reviews, aided by dashboards or vendor scorecards. They need contracts that spell out how the vendors are expected to cooperate with each other, and there should be penalties defined for failing to do so, up to and including losing the job. CIOs also need to hire financially sophisticated people with the skills to run project management offices (or equivalent governing bodies) to track those contracts. *By Susannah Patton*

74 | THE MAGIC OF POSITIVE POLITICS

AT SUTTER HEALTH, CIO John Hummel's attentive hand-holding has been instrumental in winning converts for IT. He has used his powers of persuasion to push through expensive and high-risk initiatives totaling \$1.5 billion over the next decade. Because IT can be so complicated and involves so much change, creating such anxiety in employees, CIOs like Hummel must carefully craft their message. "The idea is to make everything seem so well planned and well done that people get this overwhelming sense of confidence in you," says Hummel. And because CIOs have a limited amount of time with an audience, they must research and rehearse their message so that when they do get that minute in the elevator with the CEO, their delivery is flawless and convincing. *By Meridith Levinson*

82 | BIG MESS ON CAMPUS

ERP IMPLEMENTATIONS ARE CHALLENGING, even in highly top-down corporate environments; getting them to work in universities—essentially loose federations of largely self-governing fiefdoms—is nearly impossible. Staff in these mainly autonomous departments do not respond well to the one-size-fits-all necessities of ERP systems. Consequently, there has been a string of ERP-related meltdowns at colleges—including the University of Massachusetts-Amherst, Cleveland State and Stanford—all attesting to the difficulties endemic to the academic environment, as well as common ERP implementation mistakes such as inadequate load testing. Despite getting burned, many schools are sticking with big-suite ERP. Some universities, however, have had a measure of success by using a middleware layer to stitch together a number of different best-of-breed applications. *By Thomas Wailgum*

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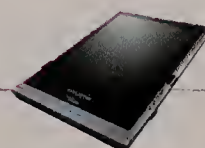
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